UMASS/AMHERST
312066005294567
herst Library

Potatoes: A Money Crop

George D. Leavens.

SB
211
P8L43

SHOUT
SHARE
IT

LIBRARY
OF THE

MASSACHUSETTS
AGRICULTURAL
COLLEGE

SB
211
SOURCE. P8L43 ----------

This book may be kept out

TWO WEEKS

only, and is subject to a fine of TWO CENTS a day thereafter. It will be due on the day indicated below.

DEC 12 1936

CARD

Digitized by the Internet Archive
in 2010 with funding from
Boston Library Consortium Member Libraries

http://www.archive.org/details/potatoesmoneycro00leav

Potatoes: A Money Crop

by

George D. Leavens, B.S.

Published by
The Coe-Mortimer Company
New York

Potato raising with E. Frank Coe's Red Brand Excelsior Guano, by the famous market gardeners, Messrs. W. & J. R. Van Siclen, of Jamaica, L. I.

POTATOES: A MONEY CROP

How to Grow, Fertilize, Spray and Harvest them at a Profit

By GEORGE D. LEAVENS, B. S.
Formerly of the Department of Fertilizers, Massachusetts Agricultural Experiment Station

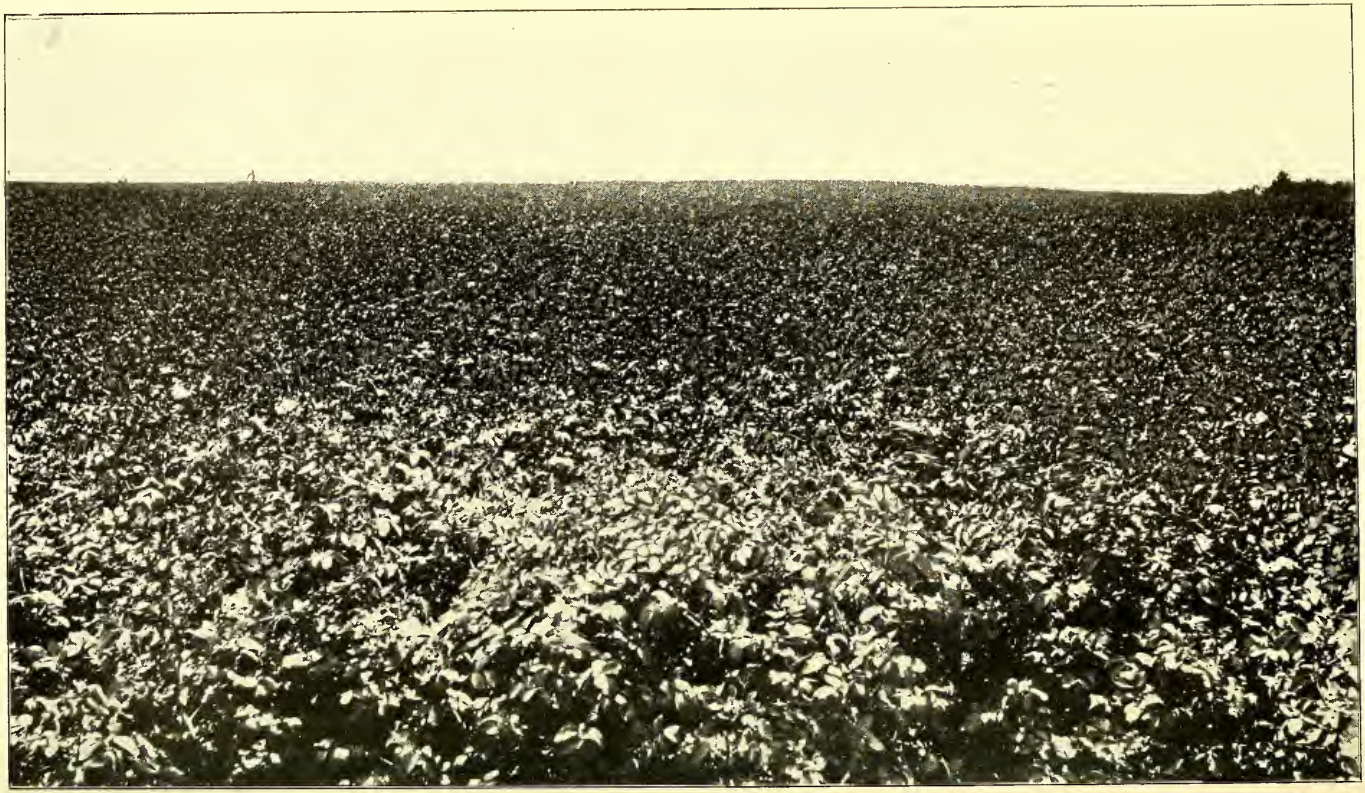
CONTAINING

The Story of A Profitable Potato Crop

By B. H. WARD
Aroostook County, Maine

Published by The Coe-Mortimer Company, New York

Copyright 1914
THE COE-MORTIMER CO.
New York



40 acres of potatoes raised with E. FRANK COE'S STANDARD POTATO FERTILIZER, by B. H. WARD, of Aroostook County, Maine.
(See "Story of a Profitable Potato Crop," Pages 33-35.)

POTATOES: A MONEY CROP.

How to Grow, Fertilize, Spray and Harvest them at a Profit.

By George D. Leavens.

IN MANY FARMS throughout the country, potatoes are the chief money crop, and if properly raised are not only a source of profit themselves, but also improve the land for crops that are to follow.

The great value of the potato as one of our staple articles of food, makes economical production of extreme importance.

In preparing this booklet, it is not the writer's purpose to over-burden potato growers with superfluous advice. It is hoped rather to summarize for the friends and customers of the Coe-Mortimer Company and for fertilizer users in general, the results of the writer's own experience in raising potatoes covering many years of practical farm life, together with the results of his observation of the best practice of prominent growers in various sections.

SOILS.

Potatoes will succeed on a variety of soils, doing best on a medium to light loam. Early crops of potatoes are, however, raised at a great profit on light and sandy soils, while heavy soils will give profitable crops of late potatoes, provided that such soils are well drained.

It is, however, useless to attempt to grow potatoes at a profit on wet, heavy and ill-drained soils. Such soils, however, may be rendered suitable for potato growing by a thorough system of drainage and subsequent plowing in of green crops.

In general heavy clay soils are unsuitable for potatoes, the tubers being soggy, poorly shaped, and subject to rot.

Potatoes as a rule give the largest yields upon new soils; that is land just taken up from grass or clover. This is not true of all conditions, however, as on heavy soils where the sod is extremely tough, the potato crop may be preceded by a crop of corn.

EARLY ROSE

The Genuine Early Rose still remains the standard early variety, and is too well known to need particular description. Though costing more than some of the cheaper red varieties (which are often substituted and branded as Early Rose), they are still raised at their best throughout Northern Aroostook County, and strangely enough, are fast superseding some of the more recently introduced early red sorts.

The Ohio Experiment Station Bulletin, No. 174, gives the remarkable record that, among 150 sorts tested, it was among ten which gave the heaviest yield, and also among the same number which gave the heaviest yield for three consecutive seasons.

(By courtesy of the E. L. Cleveland Co., Houlton, Me.)

THE PLACE OF THE POTATO CROP IN SYSTEM OF ROTATION.

The place of the potato crop in system of rotation depends in a large measure upon the character of the soil and the practice of the grower. As already indicated, if the land is in a heavy sod, a crop of corn should precede the crop of potatoes. On the other hand, if the sod is light or consists largely of clover, it should be plowed under in the fall, and the potato crop planted the following spring.

The rotation that is followed by many successful farmers in New England is the following: Potatoes, corn, grass and clover, for two years. In this case the grass is seeded in the corn at the time of the last cultivation. Another very good rotation in New England is corn, potatoes, rye and clover.

In Aroostook County, Maine, where the soil is in general a rich, gravelly loam, it is the custom to follow potatoes with a seeding to oats and grass. The spring seeding to oats and grass is more generally successful in this section than elsewhere in northeastern United States, because of the comparatively cool summers that prevail. For this reason the young grass plants are not burned and shrivelled when deprived of the shade given by the oat crop.

The favorite rotation with New Jersey farmers, is corn, upon which all the stable manure produced upon the farm is used, potatoes, upon which a large application of high-grade fertilizers is used, followed by wheat, seeded with clover and timothy. The land is kept in grass for two years and then plowed up for corn once more.

It is evident that this rotation would not be successful in the New England states, nor in Central and Northern New York, as the potatoes are not harvested early enough to afford sufficient time for proper seeding to the wheat and grass. This rotation is, however, an excellent one for Pennsylvania.

Market gardeners on Long Island pay little attention to the rotation of crops, but raise potatoes after turnips, or any market garden crop that seems suitable to them.

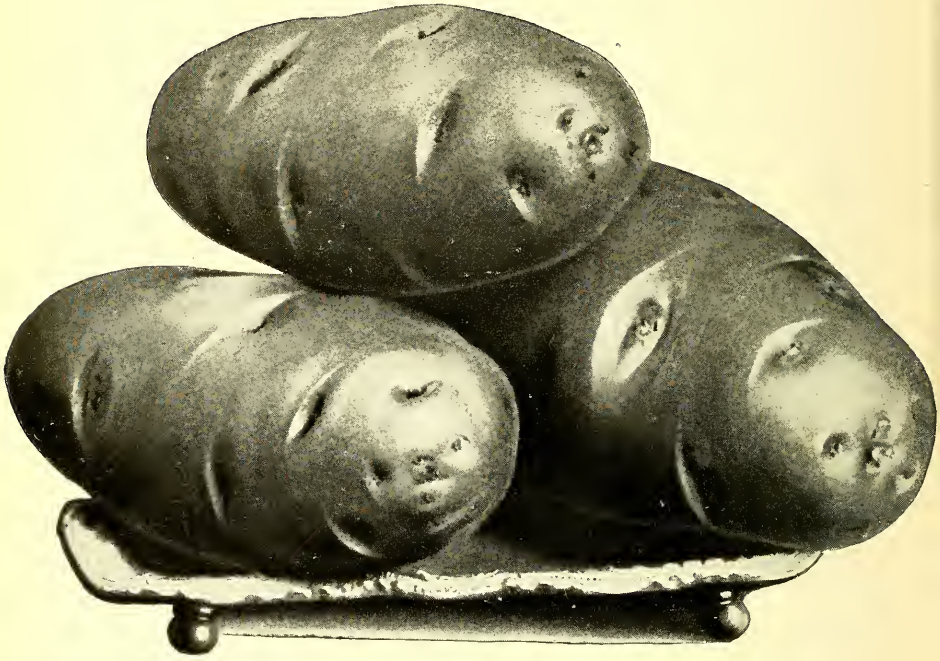
PREPARATION OF THE SOIL.

Fall plowing is generally best for medium to heavy soils that have a tough sod, while for light soils that are easily dried out and are subject to drought in summer, spring plowing may be preferable. The careful grower will readily determine which is the proper practice for his conditions.

Plow at least eight inches deep; ten inches deep is much better. In many cases it will be an advantage to follow the turning plow with a subsoil plow, but it is not desirable to turn up any of the subsoil itself.

Harrow thoroughly in order that all old growth may be completely killed out and that the soil may be thoroughly mellowed up previous to the planting of the crop. The harrow should be arranged so that it will cut seven inches down if possible.

Harrowing with a heavy cutaway disk harrow fits the land admirably for the potato crop. It is the practice of some growers to level the fields



EARLY NEW QUEEN

A very popular early variety, closely resembling its parent, the Beauty of Hebron; in fact, requiring an expert to determine one from the other. Under high cultivation there are very few small ones. In quality it is excellent, the flesh being a pure white, and of that sparkling mealy texture and fine flavor so much to be desired in a table Potato.

Regarded as one of the very best for hotel and high-class trade.

(By courtesy of the E. L. Cleveland Co., Houlton, Me.)

before planting by means of a spike tooth harrow, but this is not absolutely essential.

Thorough preparation of the soil is extremely important, as it not only prepares a proper seed bed for the crop, but also warms the soil so that plants start vigorously, and prevents in a great measure the wasteful loss of soil moisture by evaporation from the surface.

PREPARATION OF THE SEED FOR PLANTING.

If the crop is to be an exceptionally early one, the writer has found it extremely profitable to treat the seed potatoes with formalin, dry in the sun and then spread them out in a warm loft for from three to five weeks previous to planting.

By this means the potatoes become thoroughly warmed, and start short, stout green sprouts, which will not be rubbed off in the cutting of the seed if the potatoes are handled carefully. This extra care is well worth while when a portion of the potato crop is planted for extra early market.

The seed potatoes for the main crop are rarely if ever put through the sprouting process referred to. However, whether for early crop or main crop, the seed potatoes should receive the *formalin treatment for prevention of "scab" as follows:*

Soak the potatoes for two hours in a solution of one pound of formalin (formaldehyde), in 30 gallons of water. Formalin may be obtained at any drug store, and by using large half hogsheads or tanks the potatoes may be soaked in the solution mentioned while tied up in two bushel sacks with very little trouble. They should then be spread out in a sunny place to dry, after which they are ready for cutting. This treatment kills the germs of the potato "scab."

Care should be taken, however, not to put the treated seed potatoes into bags, boxes or barrels that have previously contained scabby potatoes. If this is done, the treated seed will become re-infected with the germs of the "scab," and the effects of the treatment will be in a large measure undone.

When very large quantities of seed potatoes are to be treated, the following method may be used in quantities up to a carload. A tight room or building is provided and in this the seed potatoes are placed in bushel crates or shallow slat-work bins. Procure a quantity of potassium permanganate and a quantity of formalin (formaldehyde), the same as previously referred to. For each 1,000 cubic feet in the room or building, allow 23 ounces of the potassium permanganate and 3 pints (3 pounds) of the formalin. Spread the potassium permanganate evenly over the bottom of a shallow pan or pail, placed in the center of the room, and pour the formalin over the permanganate quickly. Close the room immediately and do not open again for from 24 to 48 hours.

The potassium permanganate drives the formalin gas out of the solution and this gas penetrates to every crevice in the room, and everywhere exercises its disinfecting work in killing the "scab" germs.

The necessary precautions are to observe the proportions mentioned above, to use a dish or pan that has a wide bottom, to be sure that the sides

of the dish or pan are sufficiently high to prevent boiling over, and to avoid placing the dish or pan directly under any boxes or trays containing potatoes to be treated.

The preventive treatment for potato scab described above will of course be time and money wasted if the scab germs are already present in the soil to be planted. The importance of planting on clean land cannot be overemphasized. A more complete description of the potato scab will be found in the discussion of the "Enemies and Diseases of the Potato," later in this booklet.

CUTTING SEED POTATOES.

There has been a great deal written and said about various ways of cutting seed potatoes, and many growers insist that they should be cut according to certain methods. Practical experience shows, however, that potatoes may be cut very rapidly in almost any way, provided that the pieces average about two eyes to a piece, and provided that each piece includes a good portion of the flesh of the potato.

The young potato plant draws its food from the cutting until the roots can develop sufficiently to begin to take up nourishment from the soil; hence the importance of having a good amount of flesh with each cutting.

As fast as the potatoes are cut up, the cuttings should be dusted thoroughly with either fine ground land plaster or flowers of sulphur (finely powdered sulphur), or a mixture of both. The plaster keeps the cut pieces from wilting and they may be kept for a considerable time before planting without suffering any damage. The sulphur is regarded by many growers as an additional protection against "scab." In the light of recent investigations concerning the large amount of sulphur utilized by growing plants, it is not improbable and is, in fact, quite likely, that sulphur thus used may be of some direct value as a source of plant food.

Discard for seed purposes any and all potatoes showing signs of disease of any sort. Do not cut sound seed potatoes with a knife that has been used on diseased potatoes without first washing the knife thoroughly in a strong solution of formalin.

PLANTING.

The soil having been deeply pulverized, the crop may be planted in one of two ways. First:

HAND PLANTING. This is a slow and expensive process and should be used only for work in home gardens or small fields. The land may be furrowed out in rows three feet apart and the fertilizer spread in the furrows carefully mixed with the soil by means of a hoe or bush.

The seed pieces should then be dropped by hand from ten to twelve inches apart in the furrow. The potatoes may then be covered, either by hand hoes, or by a horse hoe. Second:

PLANTING WITH MACHINES. On large fields, it is decidedly more economical to use potato planting machines. In fact, growing on any extensive scale is impossible without them. The machine opens the furrow,

drops the seed, and applies the fertilizer mixed thoroughly with the soil, all as fast as a pair of horses will walk across the field.

Further, in planting by machine, the spacing of the seed in the furrow is very easily regulated, and the proper amount of fertilizer can be applied by changing the gauge. Hand labor is far too costly to use in growing a potato crop, and in working on a commercial scale it is not necessary to use any hand labor in the field, other than that of picking up the potatoes after digging. Five to six acres is generally considered a good day's work when planting by machine.

How Deep Shall We Plant? The depth of planting depends on several factors. If the potatoes are intended for extra early crop, they should not be planted so deep as if intended for the main crop. Early in the season, the sun's rays have not thoroughly warmed the lower layers of the soil. The upper layers, therefore, are more suitable for forcing the early crop.

The main crop, however, may be planted at a depth of from three to five inches. The depth of planting depends also in a great measure on the character of the soil. On warm, light sandy soils in New Jersey and on Long Island (or in similar soils elsewhere), deep planting is desirable. The same is true of medium to light potato loams in Pennsylvania, New York State and New England in general, except Aroostook County, Maine.

In Aroostook County, Maine, planting is comparatively shallow near the warm surface of the soil. As the plants grow, the soil is hilled up till a very high ridge is finally made. Deep planting on the light soils insures a supply of moisture during hot, dry weather, and in general deep planting is to be strongly preferred, with the exceptions that we have mentioned.

How Far Apart Shall We Plant? Until recently, the practice was to plant in rows 36 inches apart, with the seed pieces from 12 to 15 inches apart in the row. When planted at these distances, however, the land is not utilized to the best advantage for the production of a maximum crop.

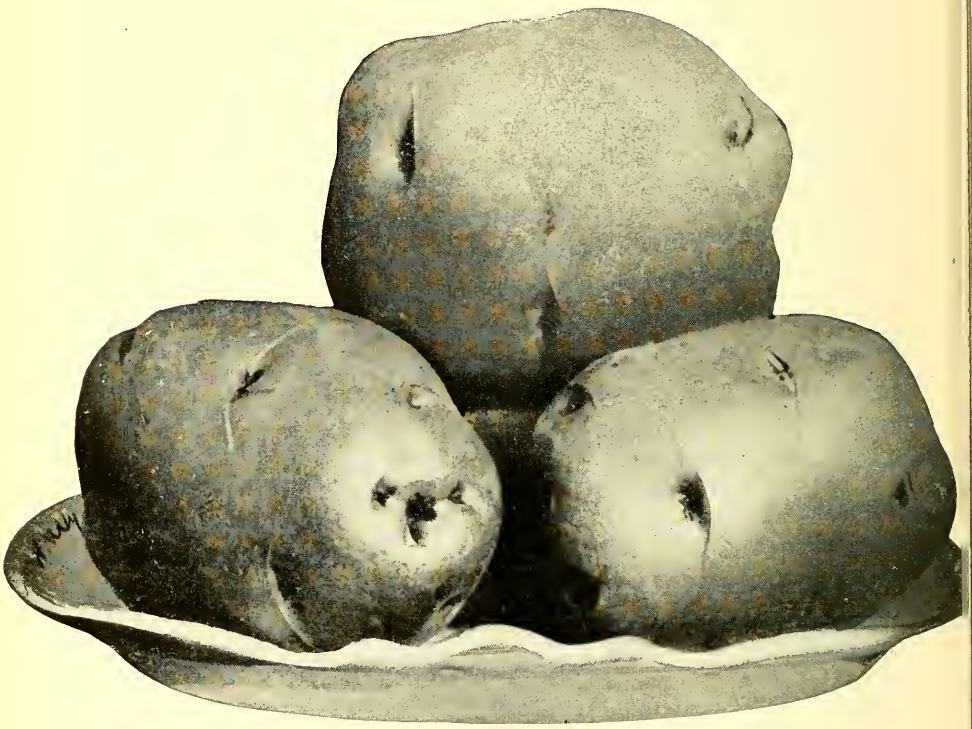
Further, many unmarketable potatoes are grown, due to their being over-sized. The market demands potatoes of a moderate and uniform size and potatoes too large are as objectionable as are potatoes that are too small.

Therefore the best practice now is to space the rows 32 inches apart and to drop the potato pieces in the row from 9 to 10 inches apart. This, of course, requires a larger quantity of seed (about 16 to 17 bushels per acre), but this is more than paid for in the greatly increased crop and in the more uniform size of the potatoes.

Many of the best commercial potato growers consider that it takes from 150 to 200 bushels of potatoes to pay the cost of raising the crop and that the profit is derived from the crop in excess of these amounts.

CULTIVATION.

The objects of cultivation are twofold. First, to keep the seed bed loose and retain moisture for the growing crop, and second, to destroy the weeds which, if unchecked, choke out the potatoes and rob them of fertility. The following is a method of cultivation applicable to average conditions



IRISH COBBLER

The Irish Cobbler is one of the most reliable, and fast becoming one of the most popular, of the early varieties. It is of handsome cream-white color, and of excellent quality, making it most desirable for the best trade. It is a vigorous grower, ripens uniformly, and a good keeper; in short, the best all-round, early potato now on the market.

(By courtesy of the E. L. Cleveland Co., Houlton, Me.)

where deep planting is practised. The writer has found this method to be convenient and profitable:

Soon after planting, the field should be gone over with a spike tooth harrow or weeder which kills the early crop of weeds and makes a good surface mulch of loose soil. Cultivation should be kept up regularly throughout the growing season, until the vines commence to blossom. The ground should then be entirely free from weeds and cultivation should cease.

The weeder is an excellent implement for the cultivation of potatoes while the vines are small. Later cultivation may be carried on by means of an ordinary walking cultivator, by means of the riding cultivator, or with Prout's Horse Hoe, which is a first-class tool for hilling up.

Prout's horse hoe throws up a broad low ridge of soil which under general conditions is far better for potatoes than the sharp pointed narrow ridge which we often see. For large fields, the riding cultivator is practically a necessity.

CULTIVATION IN AROOSTOOK COUNTY. (Also suitable for *extra early* potatoes elsewhere.) In Aroostook County, where planting is relatively shallow, a different method of cultivation is followed. Sometimes a weeder or bush harrow is used to level down the earth left in ridges over the rows, by the planter. This serves two purposes; first, it destroys small weeds and levels and pulverizes the soil; second, it brings the sunlight and air nearer to the seed pieces. Frequently, however, this step in the cultivation is omitted.

Whether the step described above is practised or not, it is the general custom to completely bury up the young plants as soon as they break through the surface of the soil. This burying up process is one that is practised almost exclusively in the State of Maine, and especially in Aroostook County. As soon as the young plants are up so that the rows may be clearly seen, the horse hoes are started and the burying up process carried on as rapidly as possible.

This is the proper time to make a secondary application of fertilizer should one be desired. In this case, instead of using the horse hoe, the potato planting machine can be used, taking off both the plows, but leaving on the disc covers and the fertilizer attachment.

Whichever is used for this work, the horse hoe or the potato planting machine, the hills should be broad and low, and the plants should be covered with about two to three inches of fine mellow earth. Subsequent cultivation is given with riding cultivators until the last and final cultivation, given just as the plants are about to come into bloom. At this cultivation, the earth should be thrown up into high ridges with the horse hoe.

FERTILIZATION.

The potato is not a good "hustler" for its plant food. Its root system is relatively restricted, and therefore the crop requires plant food in *extremely available* forms, as well as in great abundance.

One of the best known agricultural authorities in the State of Maine, is Dr. G. M. Twitchell. He writes as follows in regard to fertilizers for potatoes:

ENSIGN BAGLEY, or WHITE ROSE

One of the handsomest white early varieties on the market. Round to oblong in shape, and in quality all that can be desired. An excellent cropper; smooth and not susceptible to disease. In good demand for market use.

In earliness they compare with early Harvest, Early Rose and New Queens.

(By courtesy of the E. L. Cleveland Co., Houlton, Me.)

"One ton to the acre is the general rule on old land. One-half broadcast at the last harrowing, one-fourth in the planter, and the remainder broadcast just as the potatoes break the ground. *No man can afford to have his potato roots search for food.* It may not require the ton to grow 300 bushels of potatoes, but much less will fail to do the work desired, because the supply in, through and about the hill is not abundant." (*Pennsylvania Farmer*, May 17, 1913.)

It is a significant fact that the most successful potato growers, whether in Maine, Long Island, New Jersey, Massachusetts or elsewhere, are using from 1500 pounds to one ton per acre of the highest grades of potato fertilizers obtainable. In localities where potato growing has not reached a successful development on a commercial scale, we find only from 500 to 800 pounds of fertilizer being used, through a mistaken idea on the part of the growers that they "cannot afford" to use more.

In this connection, the statements of the late Professor Edward B. Voorhees, contained in an article written shortly before his death, have especial interest. Professor Voorhees was well known to the farmers of this country as the Director of the New Jersey Experiment Station, and as one of the leading fertilizer authorities of the world.

Professor Voorhees said in an article entitled "Fertilizers for Potatoes" prepared especially for the *American Fertilizer Magazine*:

"HIGH AVERAGE YIELDS DUE TO COMMERCIAL FERTILIZERS. The cause of the difference in yield between 70 bushels or less and 150 or more, is due largely to the intelligent use of commercial fertilizers; even our best soils in their natural condition, while they may contain enough total plant food, are not supplied with a sufficiency of the right kind at the right time, and because yard manures are neither sufficient in quantity nor properly adjusted in respect to plant food to meet the requirements in the best manner, recourse must be had to artificial supplies or fertilizers." (*American Fertilizer*, March 8, 1913.)

STABLE MANURE UNSUITABLE FOR POTATOES.

Not only is it true that stable manure provides a badly balanced ration for potatoes, as mentioned by Professor Voorhees, but it is also true that the use of stable manure encourages the development and growth of the potato scab. This is one of the diseases of the crop against which the careful grower must constantly guard.

It may possibly occur to our readers that since the writer is now engaged in the fertilizer business, he is prejudiced against stable manure. Such is not the case. The writer strongly advocates the use of stable manure, especially upon corn, cabbages, mangels, and other crops; but has found from his own experience and from his observation on the farms of others, that stable manure is entirely unsuitable for use upon potatoes.

The best crops and the most profitable crops are raised on high-grade commercial fertilizers. In this connection, Professor Alva Agee, formerly of the Pennsylvania Agricultural College, and now of the New Jersey Agricultural College, writes as follows:

"The Use of Manure. The market wants a potato that is clean in appearance, and the disease known as potato scab is one of the grower's worst enemies. It develops rapidly if any infection occurs in ground that has been heavily manured. Fresh stable manure is a good medium for its increase. This is one reason why some growers plant potatoes after corn, applying manure on the sod and then spending one year in rotting the manure and the sod. It is a good rotation wherever the ground is kept sufficiently fertile." (*National Stockman and Farmer*, May 16, 1912.)

Directions for treating seed potatoes for prevention of scab have already been given in our discussion of "Preparation of the Seed for Planting."

WHICH SHALL WE USE: HOME MIXED OR READY MIXED FERTILIZERS?

This question opens up a subject concerning which there has been considerable controversy at various times in the agricultural journals. The writer's reply, based on many years' experience as a practical farmer, and as a fertilizer manufacturer, is this:

Use *ready mixed, high grade fertilizers* prepared by first class reputable companies; but avoid cheap and low grade fertilizers which have no special fitness for the potato crop.

Lest it appear that the writer is prejudiced or biased on this subject, we wish to present the opinions of a disinterested party, namely, Mr. E. A. Rogers of Brunswick, Me., who is a practical potato grower on a large scale and who is so well recognized as an authority on potato growing, that in 1910 he prepared a special bulletin on potato culture, for the Pennsylvania State Department of Agriculture. Mr. Rogers' opinions, therefore, carry weight as representing the ideas of thoroughly practical potato growers who are engaged in this business on a large commercial scale:

"There is quite a fad in some sections among potato growers to buy chemicals and mix their own fertilizer; some claiming a great saving in cost. Those making this claim are almost invariably those who have been buying the cheaper brands of fertilizers, and paying much more for them than the analysis would warrant. Again, home-mixed goods of the same analysis seldom give as good results in the field as do those mixed by the manufacturer.

"For instance, a farmer buying chemicals in comparatively small amounts, seldom gets his material in as many different forms as the manufacturer has on hand. In the case of nitrogen, for example, the grower who buys chemicals seldom gets his nitrogen from but two sources, usually nitrate of soda and tankage, while the fertilizer manufacturer, having other sources readily at hand, makes up part of the nitrogen content out of these, thereby coming much nearer to giving the growing crop a steady, moderate supply the season through.

"Then again, a well-equipped factory will get the materials better mixed and in a more even manner than the home mixer. The home mixing fad seldom lives but a few years in a place, and it is safe to say that the percentage of home mixed fertilizer used by the potato growers of Maine is so small as to hardly be reckoned with. Maine, more than any other state, grows its potatoes on commercial fertilizer, and had there been any

great gain in home mixing, the Maine potato grower would have been at the fore in the home mixing idea years ago. The safest way is to get the high-grade fertilizer, buying of reliable firms."

The same conditions prevail among the potato growers in Long Island, New Jersey and practically wherever potato growing is managed on a commercial scale.

APPLYING THE FERTILIZER.

There is considerable difference of opinion amongst different leading growers as to the best methods of applying fertilizer. If a ton to the acre is to be used, some authorities recommend broadcasting one-half at the last harrowing, and putting in the other half (i. e. 1,000 pounds) with the potato planter.

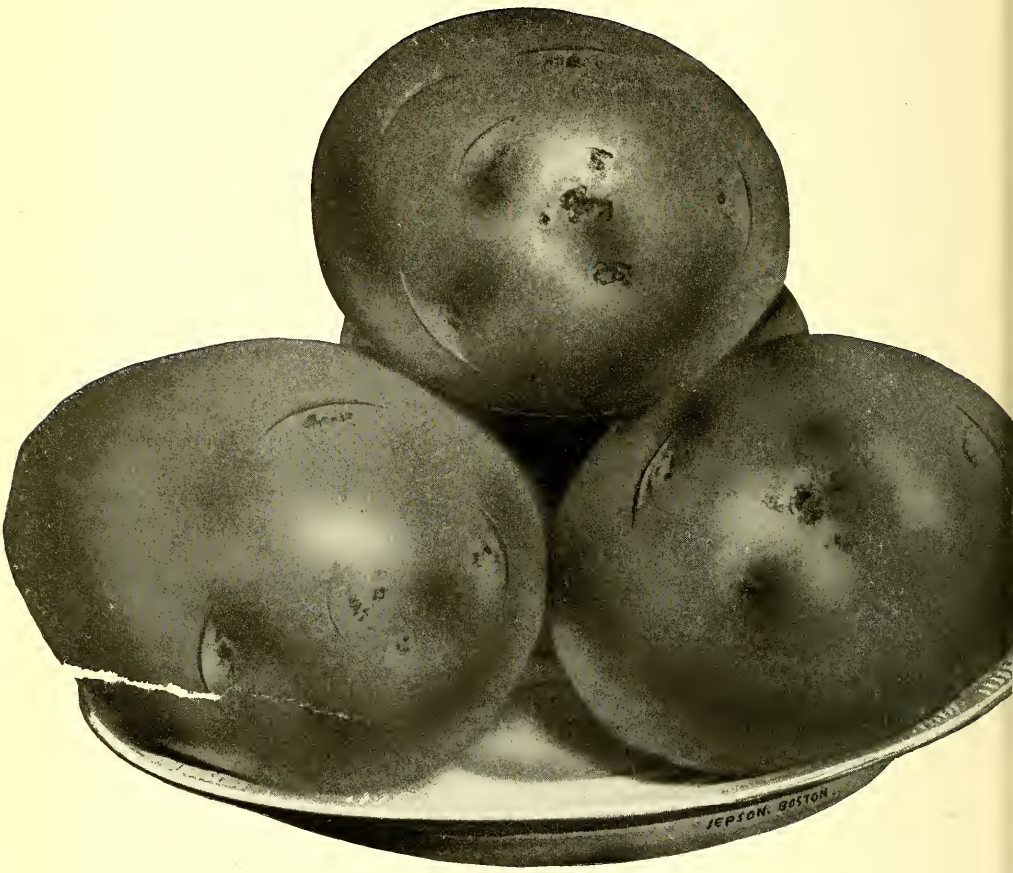
The writer's own experience has been that it is better to use from 1,200 to 1,500 pounds per acre of the fertilizer in the planter, and then to apply 500 or 800 pounds, as the case may be, as a supplementary application after the plants are well up. The most convenient way to make this supplementary application is with the potato planting machine, with the plows removed as described under "Cultivation in Aroostook County."

In view of the restricted root system of the potato plant, the writer considers it possibly the one crop in which he thinks broadcasting of the fertilizer undesirable. In general, broadcasting of fertilizer is an excellent practice. Most of the crops of our northeastern United States have such spreading root systems, that broadcasting of the fertilizer involves no waste of plant food.

WHY MAKE LARGE APPLICATIONS OF FERTILIZER?

We quote once more from the very able article prepared by the late Director Voorhees, in answer to this question.

"It is asked why make so large an application if we are to get only 200 bushels, for surely a part at least of the fertility removed is taken from the supplies of the soil itself? There are many reasons why this is the best plan; one reason, already hinted at, is that seasons are variable — the right amount of heat and moisture is not always provided. That is, there are times when the land is so dry that the potato stops growing — it cannot take up food. There are other times when it is too cold, other times too wet, so that the plants are not permitted to feed continuously. If just enough fertilizer has been applied to meet actual demands for the total crop, conditions must be perfect. [To insure success.] They are seldom, if ever, perfect, and therefore an excess must be provided to enable the plant when in a starving condition (due to any one of these causes), when conditions are again favorable, to gather food much faster than it would under normal conditions and thus make it possible for it to catch up and in the end make a full crop." (*American Fertilizer Magazine*, March 8, 1913.)



BLISS TRIUMPHS, or RED BLISS

This variety has come to the front very rapidly within the last few years, and is now one of the standard seed varieties shipped to the South and Southwestern states. It is one of the earliest kinds grown, and matures quickly. The tubers are round and uniform in shape, eyes slightly depressed, and of a beautiful bright red color. It is one of the hardiest varieties known, and is not susceptible to rot, scab or disease; in fact, it can be grown on the most heavily manured land without danger of rot.

Its great productiveness, handsome color, and resistance to disease, makes it a very popular Potato and one especially suited to Southern shippers.

(By courtesy of the E. L. Cleveland Co., Houlton, Me.)

E. FRANK COE POTATO FERTILIZERS.

The E. Frank Coe Potato Fertilizers are standard plant foods representing in their composition the fruits of many years' experience in the fertilizer business, together with the latest teachings of agricultural science. The E. Frank Coe Brands were first manufactured over fifty-five years ago, and have ever since been leaders among the standard lines of high-grade commercial fertilizers. They are prepared to cover the variations of different soils in different localities and their composition is under the direction of the leading agricultural experts of the country.

The effect of every ingredient is carefully considered and the experience of leading growers in their different sections is studied. To go into the details of formulæ and methods of manufacture would only confuse the reader with a large amount of technical detail that would prove of little interest, and certainly of little value.

The E. Frank Coe Fertilizers, however, speak for themselves when used in actual potato growing, demonstrating beyond question the superiority of the ingredients, as well as proving conclusively that these ingredients are correctly proportioned. They grow large crops of beautiful, smooth tubers, uniform in size and of the highly prized "mealy" quality when cooked.

It is a significant fact that in the face of strenuous competitive conditions, the use of E. Frank Coe Fertilizers for potatoes is increasing yearly, especially in Long Island, New Jersey, New York State and Maine, where potato growing seems to have reached its highest development.

BRANDS AND ANALYSES.

E. Frank Coe's Double Strength Potato Manure.

GUARANTEED ANALYSIS.	Per Cent.
Nitrogen	3.70 to 4.53
Equal to Ammonia	4.50 to 5.50
Available Phosphoric Acid	7.00 to 9.00
Total Phosphoric Acid	8.00 to 11.00
Potash (Actual)	10.00 to 11.00

E. Frank Coe's Blood, Bone and Potash.

GUARANTEED ANALYSIS.	Per Cent.
Nitrogen	4.11 to 4.94
Equal to Ammonia	5.00 to 6.00
Available Phosphoric Acid	7.00 to 9.00
Total Phosphoric Acid	8.00 to 10.00
Potash (Actual)	7.00 to 8.00

These two brands are especially suitable for use upon the rather light loams on which potatoes naturally grow best. A portion of the ammonia is derived from nitrate of soda, a portion from sulphate of ammonia, other portions from dissolved animal matter, blood, tankages, bone, etc., all materials of the highest availability and all correctly proportioned.

Nothing better in the way of potato fertilizers can be manufactured; neither expense nor care has been spared in preparing these two very efficient brands.

E. Frank Coe's Standard Potato Fertilizer.

GUARANTEED ANALYSIS.	Per Cent.
Nitrogen	3.29 to 4.11
Equal to Ammonia	4.00 to 5.00
Available Phosphoric Acid	6.00 to 8.00
Total Phosphoric Acid	7.00 to 10.00
Potash (Actual)	10.00 to 11.00

This brand is manufactured from the same high-grade materials as the brands previously mentioned, but the proportions are somewhat different in order to adapt this brand to soils of a heavier type. Such soils in general carry more nitrogen and more phosphoric acid than do the light potato loams, and the manufacturers of E. Frank Coe Fertilizers consider that it is wise economy for the potato grower to consider these facts in selecting the fertilizer for his crop.

E. Frank Coe's Red Brand Excelsior Guano.

GUARANTEED ANALYSIS.	Per Cent.
Nitrogen	3.29 to 4.11
Equal to Ammonia	4.00 to 5.00
Available Phosphoric Acid	8.00 to 9.00
Total Phosphoric Acid	9.00 to 12.00
Potash (Actual)	7.00 to 8.00

One of the first fertilizers ever manufactured for potatoes and for market gardening was Coe's Red Brand Excelsior Guano. For years it has held a leading position as the standard by which other potato fertilizers are measured.

While the original formula has been slightly modified to include certain quick acting ammoniates, the features that for years have given this brand a peculiar and superior character have been carefully retained.

It is adapted to practically all average soil conditions, except that on very sandy soils preference should be given to E. Frank Coe's Blood, Bone and Potash.

Where there is a marked deficiency in potash use brands carrying ten per cent. of this element.

E. Frank Coe's Excelsior Potato Fertilizer.

GUARANTEED ANALYSIS.	Per Cent.
Nitrogen	2.47 to 3.29
Equal to Ammonia	3.00 to 4.00
Available Phosphoric Acid	7.00 to 9.00
Total Phosphoric Acid	8.00 to 11.00
Potash (Actual)	8.00 to 9.00

E. Frank Coe's High Grade Potato Fertilizer.

GUARANTEED ANALYSIS.	Per Cent.
Nitrogen	2.47 to 3.29
Equal to Ammonia	3.00 to 4.00
Available Phosphoric Acid	8.00 to 10.00
Total Phosphoric Acid	9.00 to 12.00
Potash (Actual)	6.00 to 7.00

These brands are intended for use upon still heavier soils, in which there is a considerable percentage of clay. Such soils naturally contain

rather high percentages of Potash and while the object of fertilization is of course to feed the crop rather than to feed the soil, the natural characteristics of the soil, when pronounced, should be taken into consideration.

On heavy soils containing relatively a high amount of clay, such as some of the heavy loams in Massachusetts underlaid by clay subsoil, these brands give extremely good results. They are prepared from the best ingredients obtainable, and are correctly proportioned for the purposes intended.

E. Frank Coe's Extra Special Potato Fertilizer and Fruit Grower.

GUARANTEED ANALYSIS.	Per Cent.
Nitrogen	1.65 to 2.47
Equal to Ammonia	2.00 to 3.00
Available Phosphoric Acid	8.00 to 10.00
Total Phosphoric Acid	9.00 to 12.00
Potash (Actual)	10.00 to 11.00

While we do not recommend the use of stable manure for potatoes for reasons previously described, we recognize the fact that there are sometimes occasions when its use may be almost imperative. Such occasions may arise when a large amount of stable manure is produced on the farm, or is obtainable at a very low cost, and potatoes are practically the only crop under cultivation.

To meet these conditions, and also to meet the conditions that exist where large crops of clover have been turned under for green manure, we furnish this special brand.

The percentage of ammonia is low; i. e., 2%, yet this 2% is furnished in extremely available forms so that the crop may be well fed early in the season before the organic nitrogen furnished from either the stable manure or the clover crop shall have become available.

The process of nitrification, by which the organic materials are converted into nitrates requires abundant moisture and warmth. These conditions do not prevail in the early spring, or even in early summer, and the use of a proper fertilizer to give the crop a vigorous start is a necessity.

E. Frank Coe's Monmouth County Special Potato Fertilizer.

GUARANTEED ANALYSIS.	Per Cent.
Nitrogen	3.29 to 4.11
Equal to Ammonia	4.00 to 5.00
Available Phosphoric Acid	8.00 to 10.00
Total Phosphoric Acid	9.00 to 12.00
Potash (Actual)	10.00 to 11.00

This brand is prepared especially to meet the conditions that exist in New Jersey, where it gives extremely profitable results. It is not offered for sale elsewhere.

EARLY DEWDROP

An extra early variety and a very heavy producer for an early Potato. The tubers are snow-white with very smooth, velvety skin and shallow eyes. No Potato can surpass it in uniform and handsome appearance. The quality is exceptionally good, very much above the average. They are very fine grained, white as flour and of a splendid flavor; excellent keepers, and retain their good eating qualities until late in the spring, which some of the early varieties do not. The vines are tall, erect, and of vigorous growth.

Said to be one of the handsomest early white varieties grown.

(By courtesy of the E. L. Cleveland Co., Houlton, Me.)

E. Frank Coe fertilizers are manufactured by The Coe-Mortimer Company, of 51 Chambers Street, New York City. With five factories located along the Atlantic seaboard from Belfast, Maine, to Baltimore, Maryland, this company is enabled to give superior service to its customers.

CHARACTER OF FERTILIZERS.

In these days of many brands and many makes offered at many prices, it is well to bear in mind that a cut price in fertilizers seldom means a bargain. More generally it means that inferior plant foods are being used or that the fertilizers are in some way of a low grade. In this connection Professor William P. Brooks, Director of the Massachusetts Agricultural Experiment Station, says:

"It is not invariably the case, but usually the fertilizer which is offered at the lowest price per ton is, measured by plant food efficiency, the most expensive; and the high-grade fertilizers, those which are sold at the highest prices per ton, are usually much better worth the money that they cost than are the low-grade fertilizers."

SPRAYING, AND ENEMIES AND DISEASES OF THE POTATO.

The spraying of potatoes is carried on for three reasons: first, the destruction of injurious insects; second, the prevention of blight and rot; and third, to prolong the growing period of the plants; this latter being the outcome of the successful consummation of the first two.

First, Insect Pests. The principal insect pests are the flea beetle and the Colorado potato bug.

The Flea Beetle (Epitrix cucumeris), is the tiny black beetle which appears in such great numbers on the young potato plants. They puncture the leaves with a multitude of small holes, which not only work a great injury directly to the plants themselves, but also provide especially

CLEVELAND'S EARLY PERFECTION

This very fine early potato, introduced to the trade by our Company,* originated in Maine from the seed ball. In a test conducted by Professor Lawrence, of Raynham, Mass., during the season of 1908, among sixty-two varieties of both English and American stock, this stood sixth on the list, showing a yield of 410 bushels to the acre, with considerable resistance to blight. It is white in color, one of the earliest, if not the very earliest on our list; slightly flattened in shape, with blunt seed end; similar to the early Ohio, shoal-eyed, flesh white, fine-grained, excellent table quality, and a robust grower; in short, one of the most promising and satisfactory varieties.

We believe this early potato will be especially desirable and profitable as an early market-garden variety, considering its earliness, handsome white appearance, quality and productiveness. The vines are stocky with heavy foliage, tubers uniform in size, altogether one of the best keepers, and worthy of the first place.

*The E. L. Cleveland Co., Houlton, Me.

favorable lodging places for germs of early blight and late blight. The flea beetle may be overcome best by spraying with Pyrox, a preparation in many ways superior to Bordeaux mixture. It is important that the spraying be thorough, as the beetles will eat the leaves wherever the leaves are not thoroughly covered with the spray.

THE COLORADO POTATO BUG (Leptinotarsa decemlineata) is a somewhat more difficult insect to fight. For many years Paris Green has been considered the only effectual poison for this destructive insect, but Paris Green has failed to give satisfaction, since it often proves harmful to the foliage, and frequently fails to kill the bugs. It is, moreover, easily washed off by the rains.

The burning action of Paris Green on foliage is due to the fact that it contains soluble arsenic, which is almost as harmful to plants as to animals or insects. It would seem, also, that the potato bug has been growing immune to the effect of Paris Green during some years past.

Arsenate of lead has been found superior to Paris Green, as when properly manufactured, it contains no soluble arsenic, and never burns the foliage. It also adheres to the leaves much better than does Paris Green.

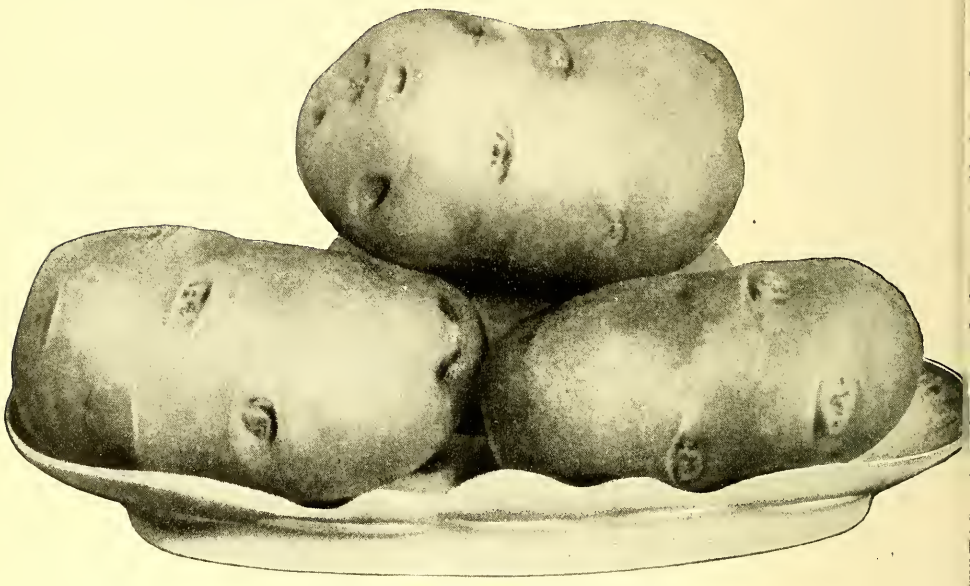
Pyrox is a preparation that combines all the merits of arsenate of lead with the merits of the very best Bordeaux mixture. It is, however, something more than a combination of arsenate of lead and Bordeaux. Copper salts are the basis of this fungicide. However, it should not be confused with Bordeaux. Pyrox is usually mixed with cold water and sticks to the foliage almost like paint. It serves so well the purpose of an insecticide and fungicide, that it is in general to be preferred to any other material for a potato spray.

EARLY BLIGHT, or potato leaf blight (Alternaria Solani) is caused by a parasitic fungus. This fungus lives within the tissues of the leaves, and spreads throughout these tissues, causing the appearance of brown dead spots on the foliage. The leaves soon die, and as the spores of the early blight multiply rapidly, the disease will spread from a small area to an entire field.

Prevention is the only course to be considered; it is too late to spray after the blight appears. Spray with Pyrox very early, when the plants are from four to six inches high. The second spraying with Pyrox should be given about ten days later and the third application ten days subsequent to this. In the event of hot, damp weather in July or August, additional spraying should be given. Spraying should be done on a clear bright day, so that the application may have a chance to dry on the leaves, after which, rain will have comparatively little effect. Repeated sprayings are, however, necessary to take care of the increased growth of the plants.

LATE BLIGHT (Phytophthora infestans) is also caused by a parasitic fungus. This may affect the leaves first, and later the tubers themselves. Late blight of potatoes is generally feared more than any other disease. It is estimated that in some years the loss from late blight in New York State alone, has amounted to as much as ten million dollars.

Treatment must be entirely preventive. The fungus does not show itself or give evidence of its presence while it is spreading through the tissues



IMPROVED GREEN MOUNTAIN

Large, Handsome, White Potato; a prolific yielder, and invariably of fine eating quality, cooking dry and mealy; a Potato that has largely superseded other varieties throughout Aroostook County, and is now the main crop table variety. It is medium early and gives excellent results on all kinds of soil. The flesh is very white, with a flavor peculiarly its own.

The vines are always very heavy, the seed being especially vigorous, and very few small Potatoes where soil is well tilled.

(By courtesy of the E. L. Cleveland Co., Houlton, Me.)

of the leaf. Later, however, it shows itself by the formation of brown spots, which gradually become larger, finally turn black and give off a most disagreeable odor as they decompose.

The disease spreads rapidly, and spraying, however thorough, is of no value at all after the spots on the leaves appear. The spores or germs of this disease, falling on the soil, are carried by the rains into contact with the tubers and the tubers themselves will decay. Frequently potatoes that look perfectly sound, and are perfectly sound at digging time, are infected at harvest with these spores or germs that are on or in the soil.

Potatoes so infected rot badly after being placed in the storehouses, so that the great dangers from late blight are not entirely avoided even if the potatoes look sound at digging time. All the more emphasis therefore must be placed on the importance of preventing this terrible disease from getting the slightest foothold.

Spray thoroughly with Pyrox as previously directed for early blight.

In addition to destroying injurious insects and preventing blight and rot, repeated experiments show that spraying prolongs the growing period of the plants. Experiments and observation show that so long as the tops of the plants are growing, the tubers are also growing, and the desirability of keeping the tops alive for a long period is therefore apparent. It would undoubtedly pay well to spray for this reason alone, even were there no insects or fungus diseases to combat.

The Vermont experiment station in Bulletin No. 159, issued in May, 1911, gives the report of many years' experience in spraying for potato diseases. We quote as follows from Page 219 relative to the results of spraying:

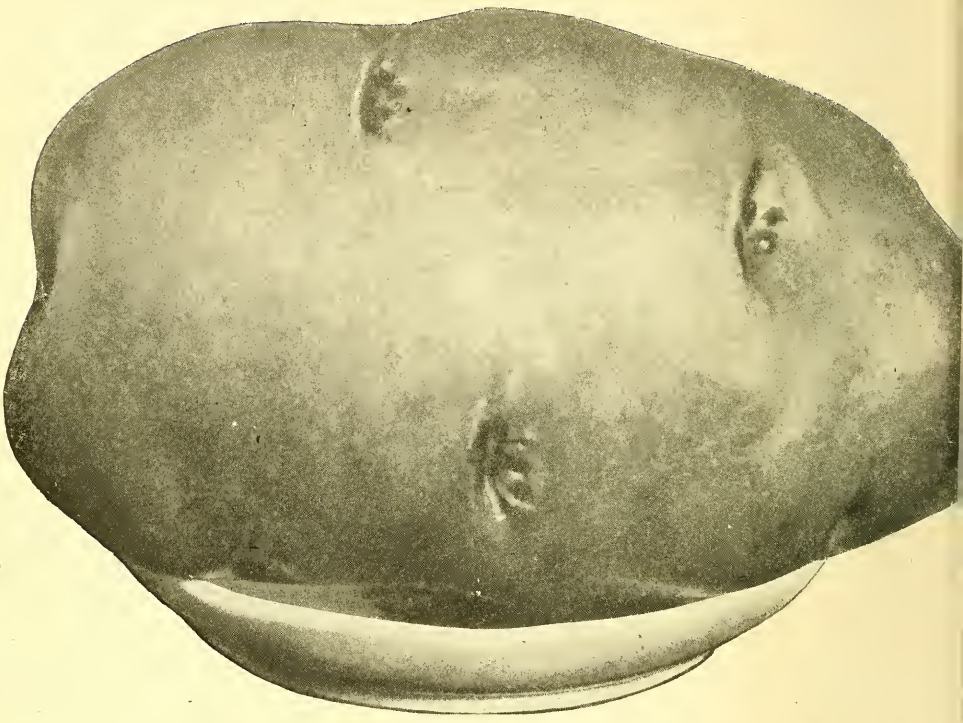
"1. It very efficiently protects the plants from the attacks of the early and of the late blight.

"2. It seems to serve in some way as a stimulus to the plant, so that it remains green from one to two weeks longer than do the unsprayed ones and, also, yields more and larger tubers."

Potato Scab (Oospora scabies). This fungus disease of the potato is very familiar. It gives to the tubers a characteristic roughened pitted surface, which practically destroys their market value. The cause of scab is, of course, the introduction of the scab germ. The conditions that favor the development and spread of scab are brought about by the use of wood ashes, lime, stable manure, etc.

An alkaline condition of the soil encourages the growth of the scab germ. Only clean soils (i. e., soils free from scab germs) should be planted to potatoes. Alkaline fertilizers should be avoided, and those of an acid character used. Full directions for treating seed potatoes so as to kill scab germs that may infect the seed are given in our discussion of "Preparation of the Seed for Planting."

We have also elsewhere mentioned the dusting of the seed pieces with finely powdered sulphur. It is suggested by Dr. H. J. Wheeler, late Director of the Rhode Island Experiment Station, that the beneficial results obtained from use of sulphur in this way are due to its gradual oxidation in the soil and the consequent production of acid.



CARMAN No. 3

In appearance, like Carman No. 1, except that the tubers are more elongated. In general appearance it resembles the Rural New Yorker No. 2, but is regarded as more popular. The skin and flesh are extremely white; of exceptionally good cooking quality and very prolific; tubers grow very compactly in the hill, and it is, therefore, more easily harvested than any other variety.

It is a good keeper, with few very shallow eyes, and is deservedly in good demand.

(By courtesy of the E. L. Cleveland Co., Houlton, Me.)

DRY ROT (Fusarium oxysporum). This fungous disease attacks the potato plant under ground, first affecting the small fine roots. Later the tubers themselves are affected and the plants wilt or blight. Tubers infected with this disease are subject to dry rot while in storage.

Land infected with this disease should not be planted to potatoes again for from three to five years. Grass and grain crops may be grown, and seem to clean the soil of this disease to better advantage than do cultivated crops.

Never use seed potatoes that show signs of this disease. Spraying gives no relief and at the present time no remedy for this disease is known once it gains a foothold.

All the more reason therefore to take special precautions to plant only clean seed on clean land.

VARIETIES.

There are many good varieties of potatoes on the market, but no one potato can safely be said to be the "best." A variety that is "best" for one locality may be entirely unsuitable for planting in a different section. Also, a variety especially good for an early crop may be much less desirable for a medium or late crop.

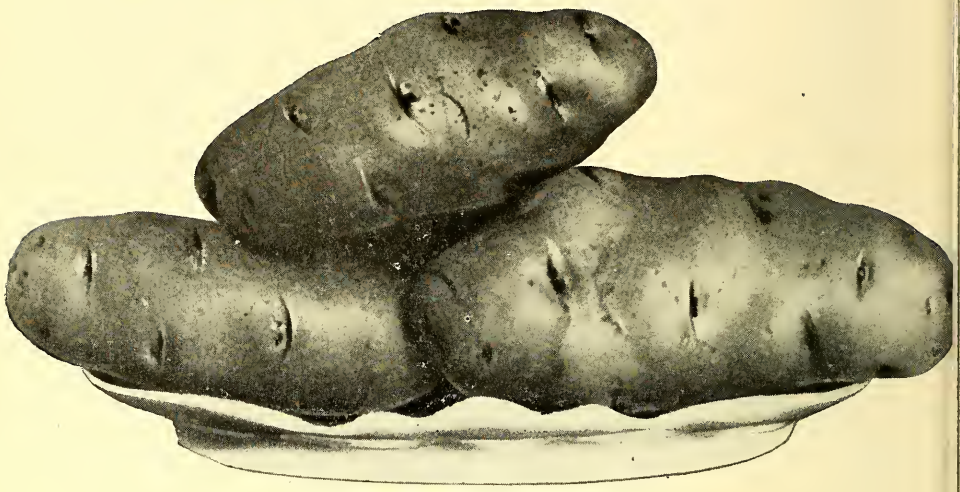
In considering the varieties also the preferences of the grower's markets should be considered. The requirements of size and shape and quality are important. We are fortunately able to present an exceptionally good series of illustrations of the different leading varieties of potatoes, true to name and true to type. This is possible through the courtesy of Messrs. E. L. Cleveland Company, of Houlton, Me., who furnished the engravings. The engravings illustrating the varieties are made from carefully taken photographs, and the descriptions of the varieties are furnished by Messrs. E. L. Cleveland Company.

The E. L. Cleveland Company is the largest seed potato house in the United States. Its reputation for reliability is nation-wide, and the quality of the potatoes that they handle is superior. At the great Land Show, held in New York City in the winter of 1912, Messrs. Cleveland won the Grand Prize, a $750.00 silver cup, awarded for the best potatoes raised in the United States or Canada. Messrs. Cleveland also won the First Prize cup for the best county exhibit of potatoes at the same show. One of these trophies is illustrated on the outside back cover. The E. L. Cleveland Company use E. Frank Coe Fertilizers.

HARVESTING.

While on small areas potatoes are still dug by hand, a more economical way of harvesting and one that is necessary for large fields is by means of the potato digger. There are several excellent potato diggers now on the market, one of which is illustrated in the appendix. By use of the digger, one man, with a suitable team, will dig about six acres per day.

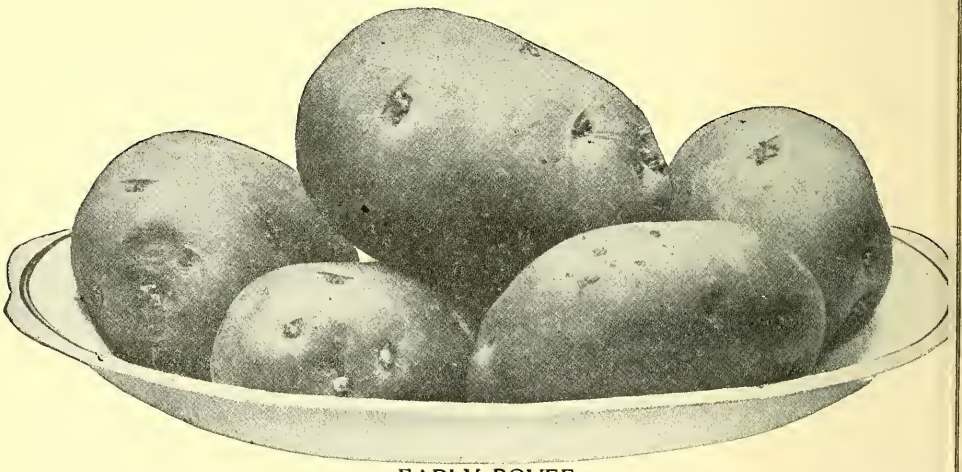
Digging is generally done in a hurry and things move with a rush. The growing season of the potato is comparatively a short one and the crop



AROOSTOOK PRIZE

One of the greatest croppers grown in this section by reason of its enormous size. Tubers are oblong, round form, eyes plentiful and somewhat deep, medium late, skin and flesh of very white color, and is a very handsome Potato, although not regarded as equal to some of the other varieties as to cooking qualities.

(By courtesy of the E. L. Cleveland Co., Houlton, Me.)



EARLY BOVEE

Notwithstanding this Potato was introduced only a few years ago, it has become very popular, and our supply has never been equal to the demand. It is of the Hebron type, and one of the earliest varieties grown in Aroostook. The tubers are long, have pink skin; of handsome appearance and fine quality. Heavy producer; has a stalky, dwarfed vine, the tubers growing compactly in the hill. This variety is especially valuable for table use by reason of very shallow eyes, fine texture, white flesh and excellent flavor.

(By courtesy of the E. L. Cleveland Co., Houlton, Me.)

must be out of the ground before freezing. After digging, the tubers should lie on the ground for from two to six hours to dry out and to toughen the skin. At the same time, care should be taken to see that they do not become sunburned.

Potatoes should not be dug when the ground is too wet. Not only will the draft of the digging machine be difficult, but a considerable quantity of earth will adhere to the tubers, injuring their appearance.

Picking up is done by hand; in some sections into bushel boxes and in others into barrels. The boxes have the advantage of being lighter to handle, but when potatoes are to be drawn direct from the field to the cars, as is frequently the case with early potatoes, the barrel is generally more convenient as the potatoes are commonly sold on the basis of a barrel price. The standard potato barrel holds two bushels and three pecks.

POTATO MACHINERY.

The potato industry is so great, and economical handling of the crop is so necessary, that special machines have been perfected for performing such operations as planting, cultivating, digging, spraying, etc. Special potato machinery is manufactured by the following companies:

A. The Bateman Manufacturing Company, Grenloch, N. J., manufactures the "Iron Age" line of potato machines, including planters, cultivators, sprayers, potato hoes and diggers. The Iron Age planter and the Iron Age riding cultivator are shown in the Appendix.

B. The Aspinwall Manufacturing Company, of Jackson, Mich., makes a special line of potato machinery including planters, diggers, sorters, etc. The Aspinwall Planter is illustrated in the Appendix.

C. Messrs. Deere & Company, of Moline, Ill., make the John Deere Harrows, Cultivators, Potato Diggers, and Horse Hoes, for the potato crop. In the Appendix is shown a picture of their "K A" pivot axle cultivator.

D. The Field Force Pump Company, of Elmira, New York, manufactures special spraying machines for use upon the potato crop. Their Watson Four-Row Sprayer and the Watson Triplex Sprayer, also manufactured by them, are shown in the Appendix.

E. The Syracuse Chilled Plow Company, of Syracuse, New York, in addition to their well-known line of superior plows, manufactures a special potato hoe illustrated in the Appendix.

F. The Belcher & Taylor Agricultural Tool Company, of Chicopee Falls, Mass., are manufacturers of Prout's Horse Hoe, an implement which, although originally intended for use upon tobacco, is excellent for cultivating potatoes and hilling up into broad, low ridges. This is illustrated in the Appendix.

G. The Hoover Manufacturing Company, of Avery, Ohio, manufactures a line of potato implements, one of the best known of which is the Hoover Potato Digger, which is illustrated in the Appendix.

Harvesting on the seed potato farm of the E. L. Cleveland Co., Houlton, Me. Messrs. Cleveland Co. use E. Frank Coe Fertilizers.

H. The Cutaway Harrow Company, of Higganum, Conn., manufactures a complete line of Cutaway Disk Harrows, and other implements for pulverizing the soil. One of their Cutaway Harrows is illustrated in the Appendix.

I. Messrs. John Watson & Co., of Houlton, Me., are the original designers of Watson's Simplex Potato Sprayer, illustrated in the Appendix.

The catalogues of any of the above companies will give many helpful suggestions in regard to potato machinery suitable for local conditions.

COST OF GROWING POTATOES.

The cost of growing potatoes will naturally vary with the local conditions. The kind of soil on which the crop is grown, the kind of machinery used, pay of laborers and many other factors have to be considered. Perhaps most important is the carefulness and ability of the grower.

Records kept by the Maine State Experiment Station at Orono, Me., of a ten-acre field of potatoes show the cost to be $699.30. The itemized expenses are as follows:

TEN ACRE FIELD.*

"Plowing at $2.00 per acre	$20.00
Harrowing five times at $3.50 per acre	17.50
Fertilizer	225.00
Seed, 130 bushels at $0.75 per bushel	97.50
Disinfecting seed (labor and material)	3.00
Cutting seed (by hand), at $0.06 per bushel	7.80
Planting, team and 2 men 3 days at $5.00	15.00
Harrowing or weeding before crop came up, four times	10.50
Cultivating crop eight times	28.00
Spraying six times ($1.00 per acre each application)	60.00
Hand hoeing and pulling weeds once	15.00
Digging and hauling to storehouse or station, at $15.00 per acre	150.00
Rent of land (5% on $50.00 per acre value), 10 acres	25.00
Depreciation of implements (plows, hoes, planter, sprayer, digger, etc.) value $250.00 estimated at 10%	25.00
TOTAL	$699.30

The returns worked out as follows:

The entire ten acres yielded 2,250 bushels, or 225 bushels to the acre.

The value of the crop per acre, 225 bushels at 50c. per bushel,	$112.50
The cost of growing per acre, as shown above	69.93
Leaving a NET PROFIT per acre of	$42.57"

In the above, depreciation of farm buildings has not been taken into account as it should be on a farm where potatoes are one of the principal crops.

The E. L. Cleveland Company of Houlton, Me., have kindly given the writer the following report of the actual cost of raising a 25-acre field of potatoes. (A portion of this field at harvest time is illustrated on Page 30.)

*From "*The Potato*," by Eugene H. Grubb.

The good results continue in Massachusetts just as in other states. Potatoes raised with COE-MORTIMER FERTILIZERS on the farm of MR. E. L. LEWIS, Taunton, Mass.

EXPENSES PER ACRE.

Fertilizer	$24.37
Preparation of ground	3.00
700 lbs. of seed	6.25
Planting	2.50
Cultivation	3.50
Harvesting	7.50
Rent of Land	10.00
Applying Paris green	1.00
Hauling to market, half a mile from field	3.50
Total per acre	$61.62

Total receipts from this 25 acres were as follows:

6187 bushels of potatoes sold at 54c. per bushel	$3,340.98
550 bushels of potatoes sold to starch factory at 20c. per bushel	110.00
Total receipts	$3,450.98
Deduct total cost of raising the 25 acres at $61.62 per acre	1,540.50
Showing a PROFIT on this 25 acres of	$1,910.48

Or $76.42 per acre.

In this calculation, however, it should be observed that no depreciation of their implements or buildings has been figured, as would be necessary if the grower were desirous of determining his real costs. Also, no spraying with Bordeaux was given to this field, Paris Green being used to kill the bugs, and clean seed and clean land evidently being relied on to prevent infection from either early or late blight. This is not a safe general rule to follow.

Thus, while it appears that certain costs were omitted in both the above calculations, it should be taken into consideration that with careful cultivation, fertilization and spraying, crops of 300 bushels to the acre are by no means unusual. In fact, they are generally possible.

Dr. G. M. Twitchell of Maine, one of the best authorities on potatoes, states that "It costs from $90.00 to $95.00 to grow an acre of potatoes. The trouble has been, we have counted only seed, fertilizer, spraying, and labor. But these are only part of the expenses. Interest, depreciation of implements, taxes, insurance of buildings, all bear a direct and important relation to the cost per bushel. * * *

"The greatest impetus in seeking maximum yield is full appreciation of costs of production. * * * It is the maximum crop alone which pays."

In this connection the following outline of the actual experience of a young Aroostook County farmer is both instructive and helpful. This story of a potato crop is written by Mr. Benjamin H. Ward of Aroostook County, Maine. The story of his grit and ability, backed by E. Frank Coe Fertilizers, comes to you just as Mr. Ward has written it.

THE STORY OF A PROFITABLE POTATO CROP.

BY B. H. WARD.

I am awful sorry that I did not write last fall, but it was right when I was awful busy with my potatoes. Had to keep fires every night under the barn to keep them from freezing.

Well, to the point. I had fifty acres of potatoes, forty-four of sod and six of potato ground, or second crop. Had twenty-three acres to plow in spring (would have had it all plowed in fall, if I had been planning on planting so heavy; it is better for sod). I plow all the way from seven to nine inches deep. I harrowed my ground, plowed in fall, three times, and then in spring twice, which made it nice and mellow.

After trading one hundred and twenty-five barrels of Mountains and forty of Carmans, I picked out twenty-five of Bliss and twenty-five of Cobblers, thirty of Gold Coins, and forty-five of my own Mountains. There was a big waste to my own Mountains for they were large and the eyes seemed to be all on the seed end, while those I traded and got, had eyes far apart and clear to the butt.

This made me about five acres of Cobblers, five of Bliss, six of Gold Coins, ten of Carmans and twenty-four of Mountains.

Commenced planting May 11. Had a man harrowing all the time while I planted, and along the last end had a boy to help me tend planter, that I paid eighty cents a day. Hauled all the fertilizer and seed into field, and did all the planting myself.

I used forty tons of the Coe fertilizer making just fifteen hundred to the acre, which was all put underneath.

Seeing that it acted like a dry year, I planted quite deep and tightened up my disk springs as tight as possible, so that I had an extra large hill, and it did prove a dry year.

Had four girls cutting seed, and they were good cutters. They didn't try to see how many they could cut in a day, but cut just as I wanted them. I used a little plaster on seed and turned them over each day and did not put them in ground while green. Used them from two to four days old.

After planting, I sowed twenty acres of grain and had ten acres of hay.

Then I took the wheel cultivator and cultivated the fifty acres. And then we ran right through with cultivator and hoe. After letting them stand a few days we cultivated again, hand-hoed, cultivated and hilled them up.

In a few days they were large enough to spray. I sprayed them all, four times and some of them five, using 3-4-5-5-6 pounds of vitriol to the acre and 5-7-9-9-10 of lime.

It being an extra bad year for bugs, it was necessary to poison twice; I used arsenic and sal soda. This is awful cheap, but a fellow has to be mighty careful with it.

I was left alone right in spraying time and did not have any more help until harvesting, excepting one of the school boys came out on a vacation and did the cooking.

My potatoes looked nice all summer, that good healthy green. I was really proud of them. I had forty-seven acres in one field, with the main road on one side and the Fort road at the end. I tell you it was a great advertisement for the Coe fertilizer. While spraying, team after team stopped me on the road and I used to have to leave them talking in order to get in a good day's work. About the first question would be: "What kind of fertilizer did you use?"

During digging, it took two teams on digger and two men to look after it putting tops through and pulling away potatoes. It took from four to six pickers, and a man and myself did the hauling with the help of one of the digging teams, when they had potatoes dug out ahead.

I kept good account, all half barrels were thrown in, and we dug out and hauled in, as high as four hundred eighty-six a day. After adding up, I found I had sixty-four hundred and fifty-one barrels. An average of one hundred twenty-nine barrels to the acre.

I had the cellar full (under the barn), the floor in two ways taken up, and the potatoes kicked back and up to the scaffold over head, which made a pile sixteen feet deep. Wagon house full, wood-shed and cellar under house full, and a thousand barrels up to Noyse's cellar.

Then it was a rush to get them out before freezing. We hauled and hauled with two teams thirty and thirty-five to the load. Then I froze a few.

I have deposited $8,570.98 from my potatoes so far, and I have eighteen hundred barrels yet, four of Bliss, one of Cobblers, and thirteen of Mountains. At the present prices my crop will bring me $13,435.98.

My expenses are about $3,000.00 or a little under, fertilizer, seed, new horse, hired help, spraying, groceries and other small expenses. Got eleven hundred sixty-eight bushels of oats from twenty acres and my hay was good.

I am afraid that when you read this letter you will be tired, but if there is anything further, I will be glad to give it. I feel that I owe the Coe Fertilizer and Coe people yet.

Yours truly,

B. H. WARD.

Over-sized growth may be prevented by close planting. Still these are "some potatoes." They were raised with E. FRANK COE FERTILIZERS.

E. Frank Coe's Double Strength Potato Manure gives handsome profits on the farm of Mr. Orren A. Glidden, Presque Isle, Maine.

APPENDIX

DESCRIPTIONS OF VARIETIES NOT ILLUSTRATED

NOROTON BEAUTY, OR QUICK LUNCH. — This new early Potato was first introduced to the trade in 1903. It is one of the earliest varieties grown, globular in form, running uniform as to size, and has peculiar pink markings, which give it a very handsome appearance. It is a sure cropper, fairly prolific, of good table quality, and especially well adapted for market-garden use on early land. It is not easily affected by disease, stalks being very vigorous until the maturity of the potatoes, when they die down quickly and completely to the ground.

EXTRA-EARLY SUNLIGHT. — A new Potato and, as its name indicates, an extra-early sort, which, on account of its handsome, white appearance and excellent cooking qualities, is proving a money-maker for truckers wherever grown, and especially in Virginia and adjacent States. Tubers medium size, oval or oblong, some slightly flattened, others taper toward blossom end; growing at medium depth, close together, with quite uniformly five or six large ones in a hill. Color very white; eyes medium size and shallow. A good keeper and a very clean potato. The Ohio State Experiment Station recommends it for early market, as well as for home use.

WHITE PEACHBLOW. — Introduced in 1902, since which time this early Potato has made a wonderful record. It was among 150 varieties tested at the Ohio Agricultural Experiment Station during the season of 1905, and their Bulletin, No. 174, says of this splendid Potato:

"A tall, vigorous, strong-growing plant; foliage heavy and dense; bloom purple; somewhat resistant to early blight; tubers medium large, oval or cylindrical, somewhat flattened; color white; recommended both for market and home use, and has yielded the highest of any variety in the test for the last three years. Eyes medium size, quite deep, and pink."

At the head of 150 varieties in point of yield for three successive seasons.

VERMONT GOLD COIN. — This is destined to be one of the leading main-crop varieties, in that it is an exceptionally heavy yielder, with the table quality of the very best. It has a fine netted skin, which gives it a yellowish or slightly russet tinge, indicating good quality, and is of fine appearance. In shape, roundish oblong, with square or tapering ends more or less flattened; eyes medium size and white. The Ohio Experiment Station says of this variety: "One of the best late sorts of recent introduction grown."

Its vigorous growth, productiveness and unequaled table quality made it one of the most popular varieties on the market.

SPALDING'S NO. 4 ROSE. — Especially desirable for early market-gardening; this being the principal variety grown in Florida for early shipment to the Northern markets. Tubers average large, medium length, more or less flattened or oval, and light pink or flesh color. Eyes medium to large and shallow; of the Rose type, but tubers larger and not so regular. This variety is a heavy yielder; therefore profitable, and for one of the medium sorts of good table quality.

EARLY NORTHER. — This very handsome Potato originated in Maine from a seed-ball of the Early Rose, and resembles this variety in shape and color, being full earlier, averaging larger, and even more prolific. It is fast becoming very popular as one of the leading seed varieties in the Middle and Southern States.

It is regarded very favorably by the market growers by reason of its productiveness and superior quality as a table variety.

EARLY OHIO. — One of the standard early varieties, and said to be "The best Potato that grows in the ground." A full week earlier than the Early Rose; shape, oblong; quality, dry, mealy, fine texture and flavor. Excellent cropper, but requires rich moist soil. In great demand.

EARLY SIX WEEKS. — Said to be the earliest Potato now grown, and especially recommended for early market trade. Grown under favorable circumstances, they are ready for the table at six weeks from date of planting, and fully matured at ten weeks. Medium-sized, very smooth-skinned, shallow-eyed, and of fine texture; in color, light pink.

Fine quality, cooking dry and mealy as soon as it attains even medium size.

EARLY HARVEST. — A Maine seedling, and deservedly entitled to the name it bears. An exceedingly handsome white Potato, of the finest quality, and particularly valuable for the early market by reason of its handsome color and early maturity.

AMERICAN GIANT. — American Giant is one of the heaviest yielders grown in Aroostook, and very profitable for market-gardening on account of its productiveness. It is a long, white, smooth, handsome potato, with shoal eyes; a late keeper, and of extra good quality for a medium-early variety; now being grown largely by the market gardeners of New Jersey and Virginia, and becoming very popular by reason of its enormous yield.

Tubers above the average as to size, and attractive in appearance.

BURPEE'S EXTRA EARLY. — An early variety that is becoming quite popular, being very productive. The tubers are of good size, free from scab, oblong in form, very smooth; in color, pinkish white. The flesh is pure white and the quality excellent. It is regarded as a sure cropper.

DAKOTA RED. — A very hardy, late variety, not susceptible to disease, and can be planted on heavily manured ground with perfect safety. In color, red, with deep eyes; form oval. It is of very good eating quality, but more especially for very late Winter and Spring use.

BURBANK. — This variety is quite largely used as one of the reliable late Potatoes; is of fair size, good form and an average yielder. It is a late keeper and of good flavor.

MONEY MAKER. — A handsome, long white Potato, and well named from the fact that it has indeed been a money maker to those growing it; being one of the heaviest yielders and a splendid main crop variety. It is a remarkably quick grower, resisting drought and blight to a considerable degree.

PEERLESS. — A handsome late variety, large yielder, and profitable all-around Potato; white in color and of fine appearance.

EARLY MANISTEE. — A seedling of the Early Rose and of the same general description. Said to be decidedly resistant to blight and of remarkable vigor, surpassing other early kinds in this particular; good yielder, and of especially fine table quality as demonstrated by comprehensive tests.

SNOWFLAKE. — A handsome white potato, with clean, clear skin; shallow eyes and one of the best, if not the very best table potato we carry. It is a vigorous grower, with heavy vines, and among the tests made on our seed farm, was one of the heaviest yielders. They cook almost as white as snow; are well flavored, dry and mealy; certainly having the requisites for an all-round desirable main crop variety, being only medium early.

HARRIS SNOWBALL. — A strong, vigorous grower. Tubers medium to large. Roundish or oblong. Color white, more or less russeted. A late potato, and does not sprout early. Fairly prolific, as indicated by one season's test.

PRIDE OF SOUTH. — This variety is a twin to the Bliss Triumph in everything except color, it being white with pink eyes. In ripening, the vines die down quickly, thus giving the blight no chance to work. It is a quick, strong and vigorous grower, and has good cooking quality; used largely in the South for market purposes.

DELAWARE. — This variety combines all the best qualities for the table and is conceded by all to be the finest eating Potato raised in Aroostook County. It resembles the Green Mountain very much in size, color and texture, and is much sought after by dealers; a late keeper and a remarkable cropper; medium early.

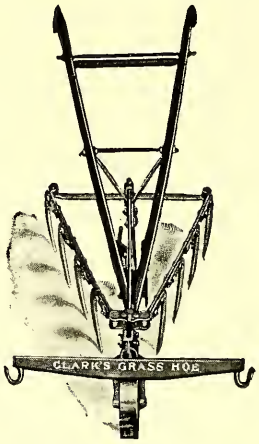
WHITE STAR. — Medium late, of good size and quality, white in color and a good keeper.

EMPIRE STATE. — A good standard late Potato and one extensively used for late planting; good yielder and cooker; in color, white.

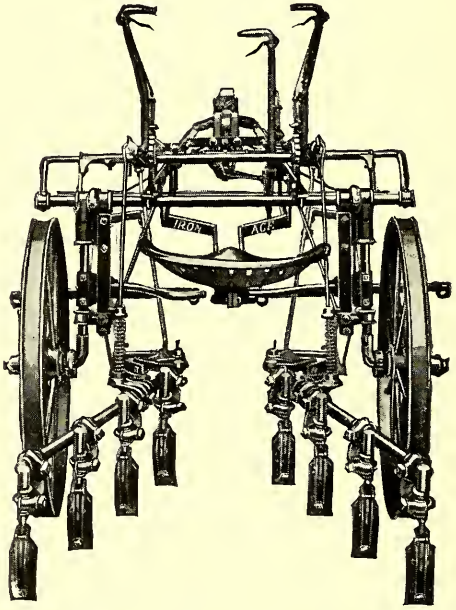
X X EARLY. — One of the early sorts, resembling Early Rose in color, but in form somewhat more oval. Will bear heavy fertilizing, free from blight, and one of the best varieties for market-gardening or main crop.

CROWN JEWEL. — A very productive, long, white, medium early variety, of excellent quality and used largely in the South for garden purposes.

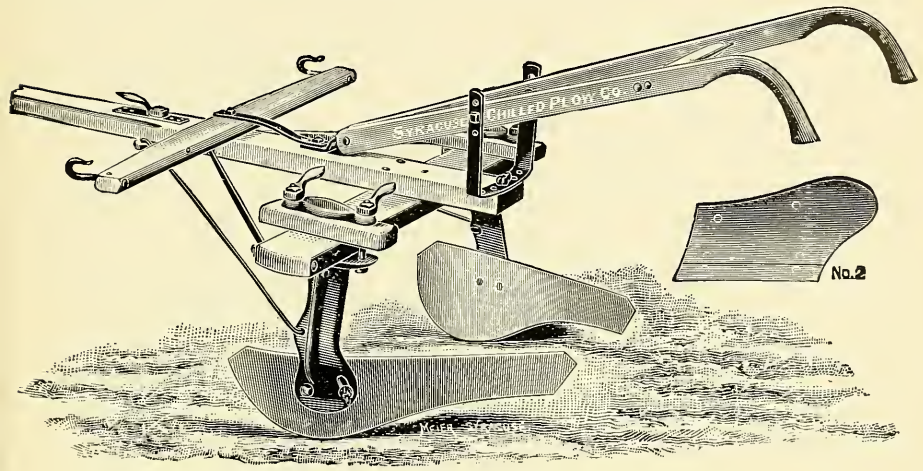
I. X. L. — A uniform smooth and handsome potato, with very few of small size. A heavy cropper, vigorous grower, and one of the best kinds of the reliable Rose family.



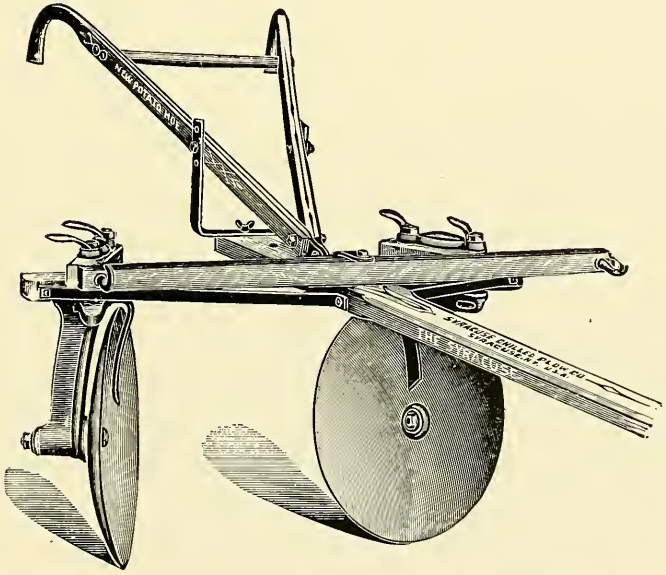
CLARK'S GRASS HOE: An excellent implement for cultivating fields infested with witch grass. (By courtesy of The Cutaway Harrow Company, Higganum, Conn.)



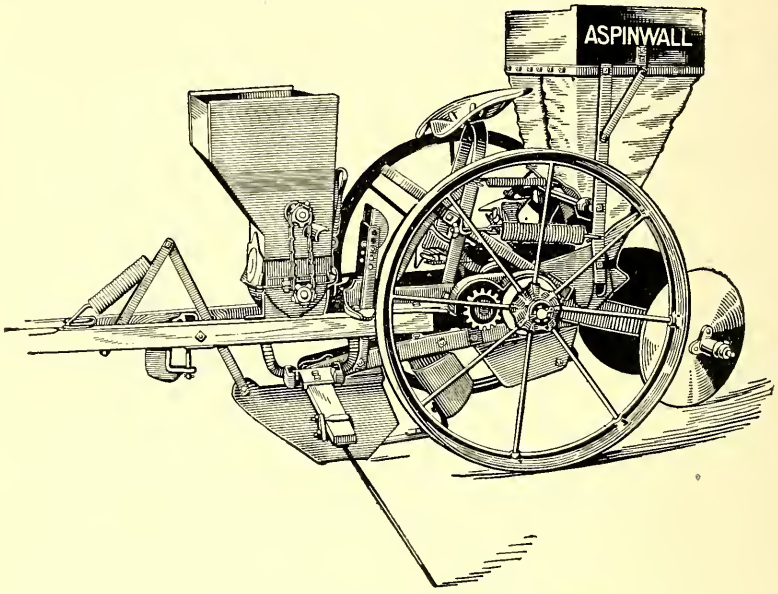
THE IRON AGE, No. 878: A practical riding cultivator. (By courtesy of Bateman Manufacturing Company, Grenloch, N. J.)



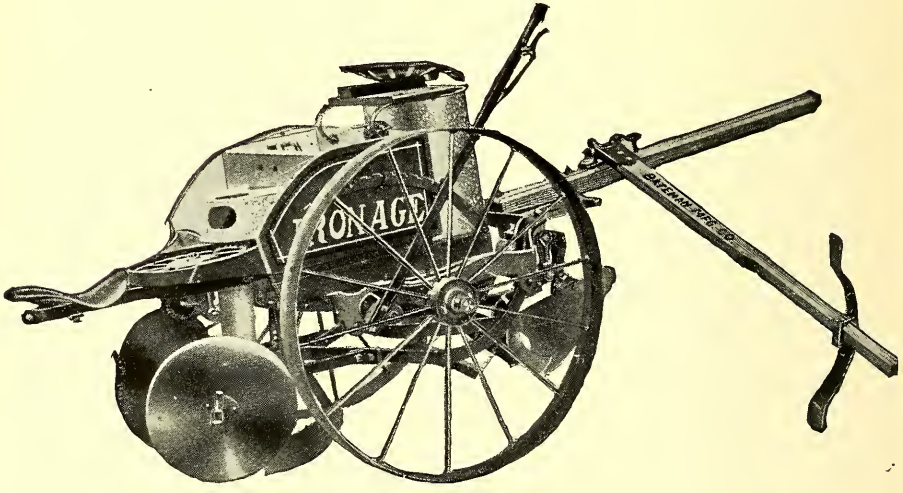
SYRACUSE POTATO HOE: For hilling up or covering. (By courtesy of the Syracuse Chilled Plow Company, Syracuse, N. Y.)



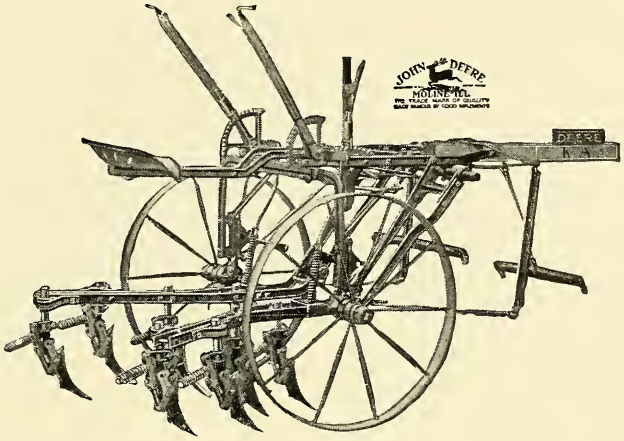
SYRACUSE POTATO HOE: Fitted with discs instead of wings: This form is preferred by many growers. (By courtesy of the Syracuse Chilled Plow Company, Syracuse, N. Y.)



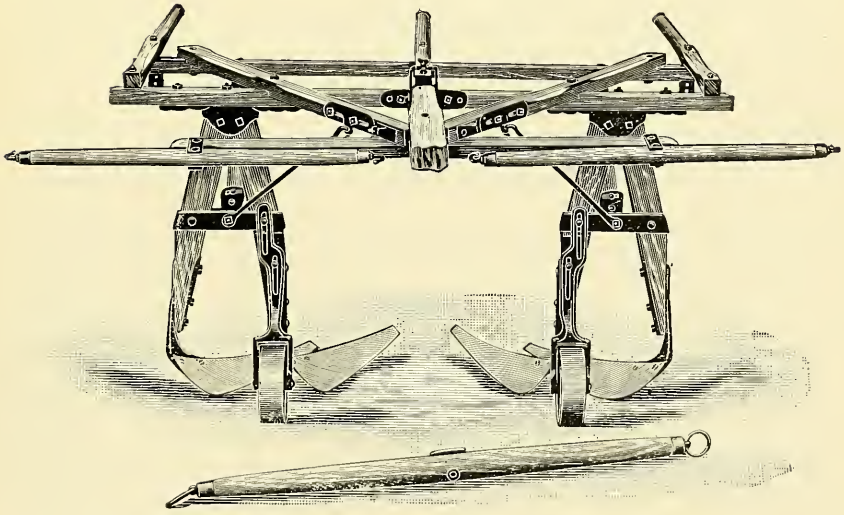
THE ASPINWALL POTATO PLANTER: An excellent type of "picker planter." (By courtesy of The Aspinwall Manufacturing Company, Jackson, Mich.)



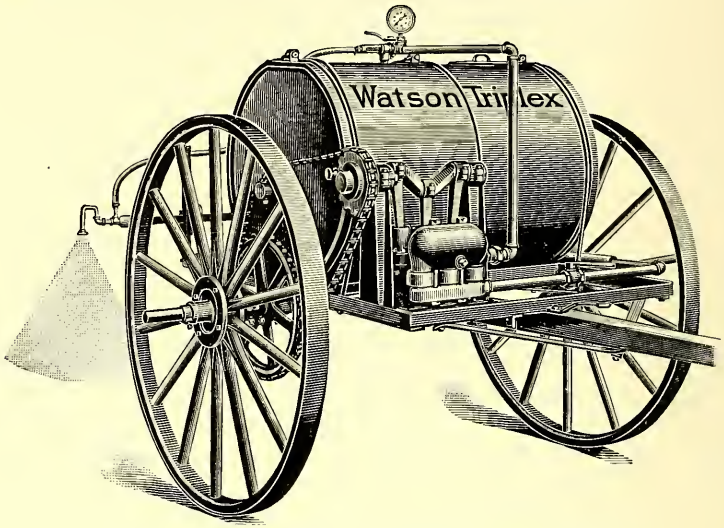
THE IRON AGE (Improved Robbins) POTATO PLANTER: The leading planter of the "platform" type. (By courtesy of the Bateman Manufacturing Company, Grenloch, N. J.)



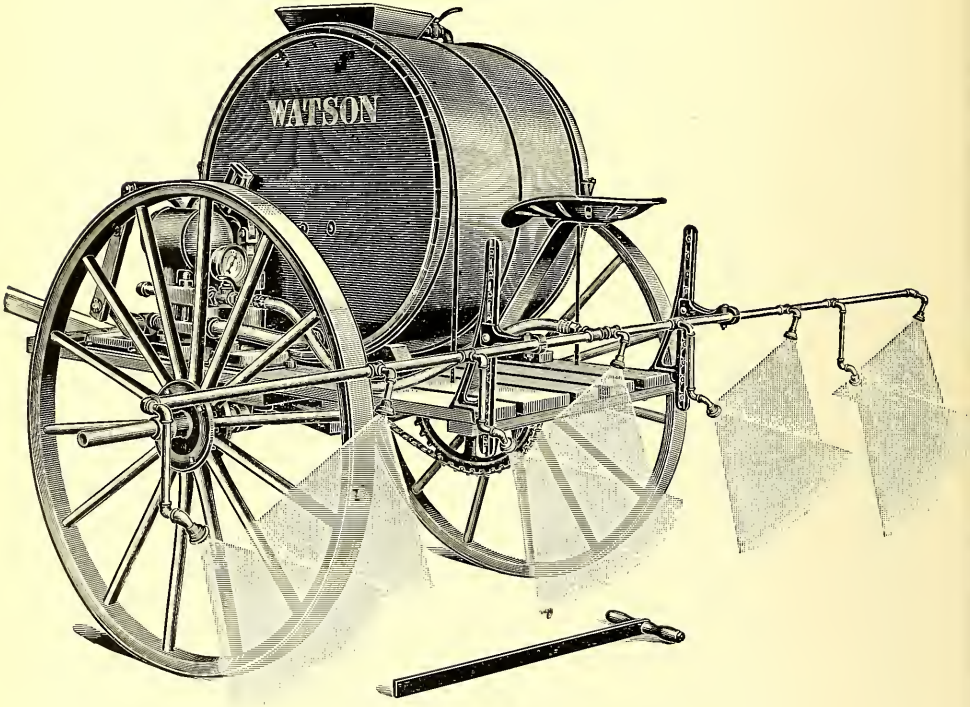
JOHN DEERE "K A" PIVOT AXLE CULTIVATOR: A first class riding cultivator for potatoes. (By courtesy of Deere and Company, Moline, Ill.)



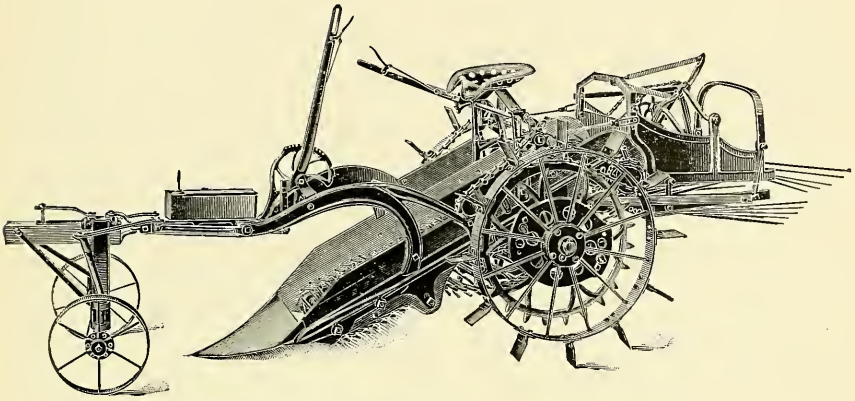
PROUT'S HOE: One of the most convenient implements for cultivating and hilling up potatoes. Forms a broad, low hill. (By courtesy of the Belcher and Taylor Agricultural Tool Co., Chicopee Falls, Mass.)



WATSON TRIPLEX POTATO SPRAYER: Sprays four rows at one time. Very largely used in Maine. (By courtesy of John Watson and Company, Houlton, Me.)



FOUR ROW POTATO SPRAYER, with eight nozzles. (By courtesy of the Field Force Pump Company, Elmira, N. Y.)



THE HOOVER POTATO DIGGER: A modern digger in every respect. (By courtesy of the Hoover Manufacturing Company, Avery, Ohio.)

Planting a field by machine. The IRON AGE (Improved Robbins) PLANTER at work. (By courtesy of the Bateman Manufacturing Company, Grenloch, N. J.)

At work in the potato field with the TWO-HORSE RIDING CULTIVATOR. (By courtesy of the Bateman Manufacturing Company, Grenloch, N. J.)

Cutting up a tough sod with the CUTAWAY DISC HARROW before plowing. This helps get the soil into condition quickly after plowing. A heavy sod inverted, forms an almost impervious mat that prevents the upward movement of soil moisture and plant food in the ground. (By courtesy of The Cutaway Harrow Company, Higganum, Conn.)

GOVERNMENT STATISTICS OF THE POTATO CROP.

TABLE 73.—*Average farm price of potatoes per bushel on first of each month, 1911-12.*

Month.	United States.		North Atlantic States.		South Atlantic States.		N.Central States east of Miss. R.		N. Central States west of Miss. R.		South Central States.		Far Western States.	
	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911	1912	1911
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
January	84.5	54.1	94.3	48.3	108.4	66.0	74.8	39.0	76.1	69.4	119.2	86.5	79.4	74.9
February	94.4	55.1	106.4	48.2	116.3	72.0	87.6	39.6	86.7	69.3	127.2	88.9	79.1	78.8
March	102.0	55.3	110.8	45.3	126.7	73.2	94.5	40.2	97.6	70.7	133.9	91.6	88.8	85.7
April	117.1	55.5	127.4	45.0	135.5	71.4	111.7	40.0	111.4	73.4	144.6	89.7	102.0	88.4
May	127.3	62.5	136.4	53.0	146.2	72.2	117.9	46.2	126.5	79.2	155.1	90.8	115.5	102.1
June	119.7	63.3	130.9	52.9	137.6	70.0	112.9	43.9	116.3	81.4	144.5	86.0	103.8	117.6
July	103.6	96.3	107.6	74.4	118.8	94.0	104.1	74.3	102.5	162.2	113.5	124.7	88.6	139.9
August	86.5	136.0	93.8	113.4	91.9	132.0	88.2	140.2	75.5	183.0	93.8	156.9	79.9	137.7
September	65.0	113.7	75.1	105.5	81.5	123.6	59.5	113.3	51.8	126.6	93.2	146.2	61.4	107.0
October	51.1	88.3	53.5	85.2	76.2	114.7	43.7	73.8	42.8	97.9	91.2	136.1	53.5	88.3
November	45.5	76.3	48.9	78.3	75.7	105.4	38.4	60.8	35.3	74.1	85.8	119 8	46.2	77.0
December	50.5	79.9	58.8	88.5	69.0	103.9	44.1	71.9	41.5	68.8	82 7	114.1	43.2	78.5

TABLE 68.—*Acreage, production, and value of potatoes, by States, 1912.*

State and division.	Acreage.	Production.	Farm value Dec. 1.	State and division.	Acreage.	Production.	Farm value Dec. 1.
	Acres.	*Bushels.*	*Dollars.*		*Acres.*	*Bushels.*	*Dollars.*
Maine	117,000	23,166,000	12,741,000	North Dakota	52,000	6,656,000	1,864,000
N. Hampshire	17,000	2,380,000	1,452,000	South Dakota	62,000	6,510,000	2,344,000
Vermont	26,000	3,640,000	2,002,000	Nebraska	118,000	9,440,000	4,814,000
Massachusetts	26,000	3,380,000	2,535,000	Kansas	70,000	5,740,000	4,190,000
Rhode Island	5,000	565,000	435,000				
Connecticut	23,000	2,461,000	1,920,000	N. C. W. of Miss. River	816,000	88,367.000	36,703,000
New York	360,000	38,160,000	22,133,000				
New Jersey	92,000	9,936,000	6,558,000				
Pennsylvania	265,000	28,885,000	16,464,000	Kentucky	51,000	5,151,000	3,451,000
				Tennessee	38,000	3,344,000	2,341,000
N. Atlantic	931,000	112,573,000	66,240,000	Alabama	15,000	1,215,000	1,094,000
				Mississippi	10,000	890,000	801,000
Delaware	11,000	1,100,000	770.000	Louisiana	20,000	1,460,000	1,212 000
Maryland	37,000	4,144,000	2,404,000	Texas	52,000	3,276,000	3,440,000
Virginia	95,000	8,265,000	5,372,000	Oklahoma	29,000	1,740,000	1,618,000
West Virginia	47,000	5,264,000	3,264,000	Arkansas	25,000	1,750,000	1,610,000
North Carolina	30,000	2,550,000	1,938,000				
South Carolina	10,000	900,000	1,008,000	S. Central	240,000	18,826,000	15,567,000
Georgia	12,000	936,000	814,000				
Florida	11,000	1,023,000	1,125,000	Montana	37,000	6,105,000	2,442,000
				Wyoming	11,000	1,540,000	924,000
S. Atlantic	253,000	24,182,000	16,695,000	Colorado	85,000	8,075,000	3,311,000
				New Mexico	9,000	900,000	585,000
Ohio	186,000	20,832,000	11,041,000	Arizona	1,000	125,000	156,000
Indiana	87,000	9,918,000	4,959,000	Utah	19,000	3,515,000	1,722,000
Illinois	137,000	13,837,000	8,302,000	Nevada	12,000	2,136,000	1,282,000
Michigan	350,000	36,750,000	15,068,000	Idaho	35,000	6,475,000	1,878,000
Wisconsin	291,000	34,920,000	11,873,000	Washington	68,000	11,356,000	4,088,000
				Oregon	65,000	10,075,000	3,123,000
N. C. E. of Miss. River	1,051,000	116,257,000	51,243,000	California	78,000	10,140,000	6,591,000
				Far Western	420,000	60,442,000	26,102,000
Minnesota	245,000	33,075,000	9,261,000				
Iowa	174,000	18,966,000	8,724,000	United States	3,711,000	420,647,000	212,550,000
Missouri	95,000	7,980,000	5,506,000				

TABLE 71.—*Yield per acre, price per bushel, and value per acre of potatoes, by States.*

State and division.	Yield per acre. 10-year averages. 1870-1879	1880-1889	1890-1899	1900-1909	1910	1911	1912	Farm price per bushel. 10-year averages for Dec. 1 1870-1879	1880-1889	1890-1899	1900-1909	Dec. 1, 1910.	Dec. 1, 1911.	Quarterly, 1912. Mar. 1.	June 1.	Sept. 1.	Dec. 1.	Value per acre, 1912.[1]
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Dolls.*
Me.	110	94	122	180	220	180	198	51	57	54	56	42	77	103	128	60	55	108.90
N. H.	112	88	103	114	150	125	140	56	57	58	66	52	87	116	142	84	61	85.40
Vt.	133	95	109	113	130	105	140	44	51	47	55	45	79	108	139	99	55	77.00
Mass.	107	92	105	103	125	93	130	68	69	68	78	70	96	131	165	93	75	97.50
R. I.	91	88	116	124	136	110	113	75	70	69	82	69	106	140	164	89	77	87.01
Conn.	87	78	94	95	125	85	107	72	68	64	80	70	105	142	152	100	78	83.46
N. Y.	92	76	79	88	102	74	106	52	50	49	59	48	90	109	125	86	58	61.48
N. J.	80	76	79	97	105	73	108	71	62	60	72	65	105	114	129	56	66	71.28
Pa.	88	72	77	82	88	56	109	57	54	53	64	52	93	115	134	71	57	62.13
N. Atlantic.	95.3	78.3	85.4	98.8	117.1	84.8	120.9	54.8	54.1	52.4	61.4	49.9	88.5	110.8	130.9	75.1	58.8	71.15
Del.	84	66	58	82	103	60	100	68	58	56	64	60	96	128	150	68	70	70.00
Md.	70	68	68	80	95	45	112	66	57	54	61	54	91	114	135	58	58	64.96
Va.	71	63	70	79	98	45	87	57	57	54	64	58	96	122	120	75	65	56.55
W. Va.	78	68	69	86	92	45	112	52	54	54	66	67	104	128	151	71	62	69.44
N. C.	88	64	71	73	89	48	85	63	62	60	73	73	108	115	137	73	76	64.60
S. C.	79	57	67	79	90	70	90	91	81	86	105	105	122	142	159	135	112	100.80
Ga.	77	62	61	72	82	72	78	109	86	83	100	105	110	132	153	110	87	67.86
Fla.	.....	70	73	81	90	90	93	....	90	100	119	100	145	158	138	115	110	102.30
S. Atlantic.	74.9	64.8	68.8	79.6	94.2	50.1	95.6	62.8	60.6	57.5	69.7	66.0	103.9	126.7	137.6	81.5	69.0	65.99
Ohio.	82	69	65	84	82	65	112	57	54	51	59	51	84	114	138	80	53	59.36
Ind.	70	68	62	79	84	58	114	56	52	53	60	50	87	116	138	71	50	57.00
Ill.	76	74	66	85	75	50	101	58	52	56	64	59	90	113	141	66	60	60.60
Mich.	84	78	76	88	105	94	105	53	44	37	44	31	71	89	107	58	41	43.05
Wis.	86	82	83	92	95	116	120	46	44	37	45	38	62	85	99	50	34	40.80
N. C. E. Miss. River.	79.4	74.2	71.1	86.6	92.0	85.6	110.6	53.2	48.4	44.5	51.0	41.0	71.9	94.5	112.9	59.5	44.1	48.76
Minn.	98	94	87	88	61	115	135	40	38	34	44	64	58	84	99	36	28	37.80
Iowa.	93	80	74	82	72	74	109	42	43	44	53	60	73	110	126	65	46	50.14
Mo.	78	72	71	81	86	27	84	51	48	50	62	68	102	125	146	67	69	57.96
N. Dak.	.....	85	90	94	41	120	128	....	39	36	46	91	55	78	98	49	28	35.84
S. Dak.	.....	85	68	83	44	72	105	....	39	42	49	85	70	93	128	62	36	37.80
Nebr.	91	75	62	83	60	52	80	43	44	55	55	84	92	124	149	73	51	40.80
Kans.	87	69	60	76	57	22	82	59	63	59	73	90	106	132	162	73	73	59.86
N. C. W. Miss. River.	87.7	78.1	72.1	83.0	63.8	73.8	108.3	45.3	45.9	44.6	52.9	70.8	68.8	97.6	116.3	51.8	41.5	44.98
Ky.	73	63	62	74	92	39	101	55	52	54	65	62	107	133	175	64	67	67.67
Tenn.	80	62	58	70	80	41	88	54	52	56	67	65	108	135	155	80	70	61.60
Ala.	75	64	64	73	80	78	81	100	87	84	95	94	118	145	152	114	90	72.90
Miss.	78	65	66	82	85	83	89	98	84	80	92	94	115	144	133	108	90	80.10
La.	70	64	66	66	55	69	73	95	85	81	88	90	100	105	115	92	83	60.59
Tex.	91	64	67	66	51	57	63	123	90	90	97	110	126	140	128	108	105	66.15
Okla.	.....	.....	.....	76	60	18	60	.....	.....	.....	88	100	124	149	174	100	93	55.80
Ark.	87	70	69	70	84	55	70	82	69	65	81	85	115	137	145	93	92	64.40
S. Central.	76.4	63.8	63.5	70.8	72.4	48.9	78.4	68.6	62.6	64.2	80.4	81.7	114.1	133.9	144.5	93.2	82.7	64.86
Mont.	.....	104	117	150	120	150	165	....	68	53	57	85	74	82	111	70	40	66.00
Wyo.	.....	92	122	145	100	42	140	....	67	60	67	82	140	151	201	95	60	84.00
Colo.	[2]120	82	91	130	100	35	95	[2]78	71	52	60	55	99	100	156	80	41	38.95
N. Mex.	.....	78	69	77	47	80	100	....	75	74	94	104	100	133	152	140	65	65.00
Ariz.	.....	66	72	.....	92	95	125	....	76	74	...	126	140	145	140	115	125	156.25
Utah.	.....	87	120	144	142	140	185	....	45	42	50	59	85	91	143	61	49	90.65
Nev.	104	91	132	155	150	160	178	167	84	58	75	80	93	102	132	130	60	106.80
Idaho.	.....	95	128	148	142	180	185	....	62	50	53	65	65	81	88	60	29	53.65
Wash.	.....	118	127	134	131	160	167	....	49	40	50	73	68	77	75	44	36	60.12
Oreg.	115	98	103	109	105	130	155	65	50	46	58	70	67	78	75	50	31	48.05
Cal.	116	89	89	125	130	135	130	95	63	55	71	85	90	103	121	61	65	84.50
Far Western.	113.6	94.0	102.0	129.2	116.9	115.1	143.9	88.8	60.4	49.0	59.3	71.8	78.5	88.8	103.8	61.4	43.2	62.15
U. S.	87.9	76.5	76.4	91.4	93.8	80.9	113.4	54.1	51.2	48.1	57.4	55.7	79.9	102.0	119.7	65.0	50.5	57.28

[1] Basis, Dec. 1 price. [2] The Territories.

350 bushels per acre on the farm of MR. WALTER UPDIKE, of Trenton, New Jersey, raised with E. FRANK COE'S MONMOUTH COUNTY SPECIAL POTATO FERTILIZER.

GRAND SWEEPSTAKES TROPHY ($750.00 STERLING SILVER CUP)

FOR BEST STATE EXHIBIT OF POTATOES

Competition open to the entire United States and Canada

Won by The E. L. Cleveland Co., Houlton, Me., at the New York Land Show, 1912

Users of E. FRANK COE FERTILIZERS

Manufactured only by THE COE-MORTIMER COMPANY, 51 Chambers St., New York